Reserve
1
En82B

SHOUT
SHARE
IT

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

~~Reserve~~

'43

LIBRARY

OF THE

UNITED STATES

DEPARTMENT OF AGRICULTURE

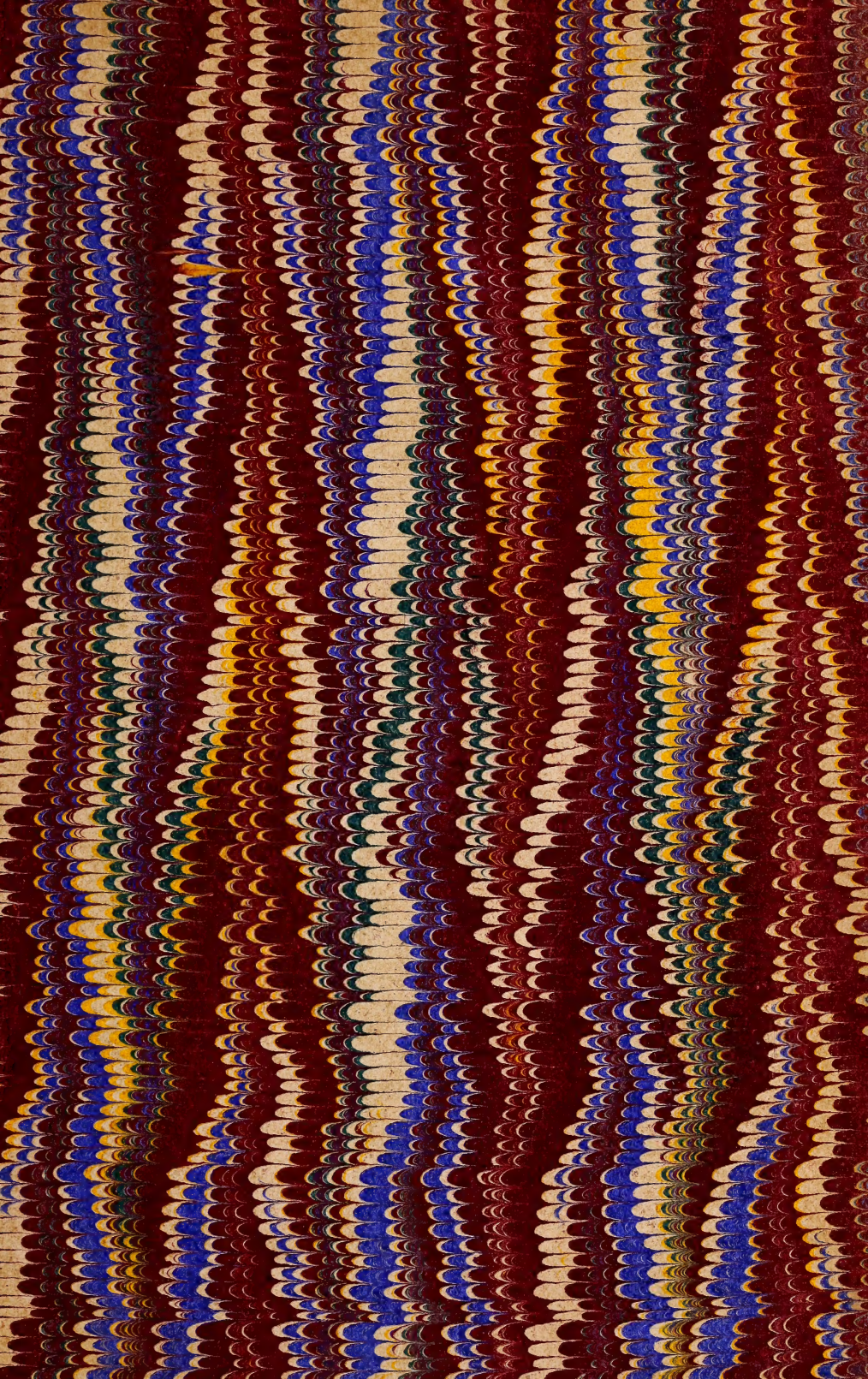
352199 Reserve

Class 1

Book En82B

Index 1-30.

8—1577



STANDARDIZATION
GRAIN
APR 28 1913
REFEREE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

LIBRARY
RECEIVED
★ AUG 2 1 1913 ★
U. S. Department of Agriculture

49
Ent

U. S. DEPARTMENT OF AGRICULTURE,

DIVISION OF ENTOMOLOGY—BULLETIN NO. 36, NEW SERIES.

L. O. HOWARD, Entomologist.

AN INDEX

TO

BULLETINS NOS. 1-30 (NEW SERIES)

(1896-1901)

OF THE

DIVISION OF ENTOMOLOGY.

Compiled under the direction of the Entomologist

BY

NATHAN BANKS, Assistant Entomologist.

WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1902.

LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Division of Entomology,
Washington, D. C., July 10, 1902.

Sir: I have the honor to transmit herewith manuscript of an index to the Bulletins of the Division of Entomology, Nos. 1 to 30, new series, published in the years 1896 to 1901, and which has been prepared by Mr. Nathan Banks, an assistant in this office. These Bulletins are constantly referred to by experiment-station entomologists and others interested in this subject, and we have frequently received letters asking that such a general index be published. I therefore have no hesitation in recommending its publication.

Respectfully,

L. O. Howard,
Entomologist.

Hon. James Wilson,
Secretary of Agriculture.

352134

AN INDEX TO BULLETINS NOS. 1 TO 30 (NEW SERIES) (1896 TO 1901) OF THE DIVISION OF ENTOMOLOGY.

AUTHORS.

[Roman numerals refer to number of bulletin.]

Aldrich, J. M., II, 28.
Alwood, W. B., VI, 80; XVII, 70, 72.
Banks, N., XXII, 99; XXIV.
Barrows, W. B., IX, 27, 49.
Benton, F. H., I.
Britton, W. E., XVII, 81.
Bruner, L., VII, 31, 36.
Burgess, A. F., XVII, 59; XX, 107.
Busck, A., XXII, 88.
Chittenden, F. H., II, 36; IV, 112; VI, 85; VII, 60, 67; VIII; IX, 20, 64; X, 26, 54, 79, 82; XVII, 84; XVIII, 35, 44, 82, 83; XIX; XXII, 37, 51, 64, 93; XXIII; XXVII; XXIX; XXX, 45, 63.
Cockerell, T. D. A., II, 91; IX, 25; XVII, 87; XXII, 92.
Cooley, R. A., XVII, 61.
Coquillett, D. W., VII, 64; X, 66, 70; XVIII, 81; XXII, 44, 48.
Cordley, A. B., IX, 71.
Davis, G. C., II, 35.
Doran, E. W., XVII, 90.
Dyar, H. G., XXVII, 60.
Felt, E. P., XVII, 16; XX, 39, 60; XXVI, 22.
Fernald, C. H., II, 59; VI, 5; XVII, 24.
Fernald, H. T., XXVI, 34.
Fiske, W. F., XVII, 67; XXVI, 33.
Fletcher, J., XXVI, 94.
Forbush, E. H., XVII, 78; XX, 85, 104.
Galloway, B. T., XXVI, 59.
Gillette, C. P., II, 96; VI, 89; IX, 30, 32, 75, 76, 77; XXVI, 5, 54, 76
Harvey, F. L., II, 99.
Harward, W., XXII, 96.
Havens, F. G., XXII, 83.
Hemenway, H. D., XXII, 69.
Hinds, W. E., XXX, 78.
Hopkins, A. D., II, 75; VI, 49, 71; XVII, 44; XXI; XXVIII.
Howard, L. O., II, 40; III; IV; VI, 13, 36, 74; VII, 40, 62; IX, 15, 18, 38; X, 20, 63; XI; XII; XIII; XVII, 13, 55, 57; XVIII, 7, 30; XX, 24, 28, 36; XXII, 7, 24, 93, 107; XXV; XXVI, 16, 17, 54; XXX, 39, 75, 82, 97.

Hubbard, H. G., VII, 9; IX, 38; XVIII, 13.
Hunter, W. D., X, 40; XXII, 30.
Johnson, W. G., VI, 63, 74; IX, 80, 83; XVII, 39, 92; XX, 43, 62, 94, 99; XXVI, 55, 73, 80.
Kirkland, A. H., VI, 27; IX, 46; XVII, 70; XX, 53, 102; XXVI, 75.
Koebele, A., XXX, 88.
Lintner, J. A., II, 50, 69; VI, 54.
Lounsbury, C. P., IX, 34; XXVI, 41.
Mally, C. W., IX, 40; XVII, 98; XX, 68.
Marchal, P., IX, 54.
Marlatt, C. L., II, 19, 47; III; IV; VI, 30, 38; IX, 54; X, 7; XIV; XVII, 94; XVIII, 52, 59; XX, 5, 36, 73, 76; XXX, 33.
Matsumura, M., X, 36.
Mokrzhetski, S., XVIII, 78.
Morgan, H. A., VI, 93; XXX, 7.
Osborn, H., V; VI, 78; XVI; XVII, 6.
Penny, C. L., XXVI, 60.
Pergande, Theo., VII, 52; XVIII, 13, 26; XXII, 92.
Piper, C. V., XXII, 41.
Quaintance, A. L., XVII, 94; XX, 56; XXVI, 35.
Rane, F. W., XVII, 75.
Reh, L., XXII, 79.
Rolfs, P. H., IX, 27.
Sanderson, E. D., XXVI, 60, 66.
Schöyen, W. M., IX, 79.
Scott, W. M., XX, 82; XXVI, 49.
Simpson, C. B., XXX, 51.
Smith, J. B., II, 6, 31; VI, 46; XVII, 32.
Southwick, E. B., II, 35.
Tepper, J. G. O., XXII, 95.
Webster, F. M., II, 76, 79, 84; VI, 18, 66; IX, 5, 30, 40; XV; XVII, 98; XX, 46, 55, 68; XXVI, 59, 84.
Weed, C. M., II, 28; XVII, 67, 76; XXVI, 32, 33.
Weed, H. E., II, 26, 98.
Woodworth, C. W., XXVI, 90.
Zehntner, L., X, 32.

ILLUSTRATIONS.

[Roman numerals, in capitals, refer to number of bulletin.]

ACARINA.

Argas americanus, V, pl. iii, fig. 3.
Bdella sp., XIV, 104.
Boophilus bovis, V, pl. iv, pl. v.
Bryobia pratensis, IV, 51.
larva, IV, 52.
Cheyletus sp., XIV, 104.
Chorioptes symbiotes, V, 265.
Demodex folliculorum, V, 274.
Dermacentor americanus, V, 260.
Dermanyssus gallinæ, V, 254.
Iphis ovalis, XIV, 104.
Ixodes ricinus, V, 262.
Leptus americana, V, 252.
irritans, V, 252.
Linguatula rhinaria, V, 275.
serrata stage, V, 275.
Myobia musculi, V, 264.
Myocoptes musculinus, V, 265.
Oppia pilosa, XIV, 102.
Oribatella sp., XIV, 102.
Oripoda elongata, XIV, 102.
Ornithodorus americanus, V, pl. iii, fig. 2.
Pediculoides ventricosus, X, 17; XIV, 103.
Psoroptes communis, V, 267.
Rhiphistoma leporis, V, 261.
Rhynchoprium spinosum, V, pl. iii, fig. 1.
Sarcoptes mutans, V, 273.
side view, V, 273.
scabiei, V, 269.
legs, V, 270.
mouth parts, V, 270.
burrow, V, 271.
Tetranychus bimaculatus, adult, XXVII, 36.
palpus, XXVII, 36.
claws, XXVII, 36.
Trombidium locustarum, eggs and larva, XXX, 22.
larva and adult, XXX, 23.
Tyroglyphus longior, IV, 100.
siro, IV, 101.
sp., XIV, 103.

MYRIOPODA.

Scutigera forceps, adult, IV, 48.
larva, IV, 49.

THYSANURA.

Lepidocyrtus americanus, IV, 82.
Lepisma domestica, IV, 77.
saccharina, IV, 76.

PSEUDONEUROPTERA.

Atropos divinatoria, IV, 79.
Termes flavipes, male and female, IV, 70.
head of female, IV, 72.
egg and larva, IV, 73.
different forms, IV, 74.

ORTHOPTERA.

Dictyophorus reticulatus, adult, XXX, 28.
sac of, XXX, 29.
Grasshopper eggs, exposed by cultivation, XXX, 15.
Gryllus assimilis, adult, IV, 54.
wings, IV, 55.
domesticus, IV, 53.
Melanoplus differentialis, adult, XXX, 11.
oötheca, XXX, 12.
Orchelimum agile, adult, XXX, 30.
egg-punctures, XXX, 30.
Periplaneta americana, IV, 84.
egg-capsule, IV, 89.
australasiæ, IV, 91.
orientalis, IV, 92.
Phyllodromia germanica, IV, 92.
Schistocerca americana, adult, XXX, 26.
obscura, adult, XXX, 27.
fifth stage, XXX, 27.

MALLOPHAGA AND PEDICULI.

Docophorus coccygi, V, 222.
corvi, V, 220.
cygni, V, 192.
quiscali, V, 219.
speotyti, V, 222.
testudinarius, V, pl. ii, fig. i.
Goniocotes abdominalis, V, 193.
burnetti, V, 194.
compar, V, 193.
rectangulatus, V, 194.
Goniodes damicornis, V, 196.
dissimilis, V, 195.
falcicornis, V, 197.
stylifer, V, 196.
Gyropus gracilis, V, 215.
ovalis, V, 215.

Hæmatomyzus proboscideus, V, 188.
Hæmatopinoides squamosus, V, 187.
Hæmatopinus acanthopus, V, 182.
antennatus, V, 183.
asini, V, 180.
eurysternus, V, 173.
hesperomydis, V, 185.
montanus, V, 184.
pedalis, V, 171.
piliferus, V, 169.
sciuropteri, V, 183.
suturalis, V, 185.
urius, V, 179.
vituli, V, 177.
Lipeurus baculus, V, 199.
infuscatus, V, pl. ii, figs. e, f.
polytrapezius, V, 201.
squalidus, V, 200.
subangusticeps, V, pl. ii, fig. g.
variabilis, V, 202.
Menopon biseriatum, V, 211.
expansum, V, pl. ii, fig. j.
interruptus, V, pl. ii, fig. h.
pallidum, V, 211.
Nirmus abruptus, V, pl. ii, fig. c.
cordatus, V, pl. ii, fig. a.
marginatus, V, pl. ii, fig. b.
parallelus, V, pl. ii, fig. d.
Ornithobius cygni, V, 202.
Pediculus capitis, V, 167.
vestimenti, V, 167.
mouth parts, V, 165.
Phthirius inguinalis, V, 166.
Trichodectes castoris, V, 241.
climax, V, 205.
geomydis, V, 239.
latus, V, 204.
limbatus, V, 205.
mephitidis, V, 242.
parallelus, V, 240.
parumpilosus, V, 208
pilosus, V, 207.
scalaris, V, 209.
setosus, V, 238.
sphærocephalus, V, 206.
subrostratus, V, 203.
tibialis, V, 240.
Trinoton lituratum, V, 214.
luridum, V, 213.

HEMIPTERA.

Acanthia hirundinis, V, 161.
antenna, V, 162.
inodora, V, 160.
antenna, V, 162.

Acanthia lectularius, adult, IV, 32; V, 158.
egg and young larva, IV, 33.
larval stages, IV, 35.
head, V, 159.
antenna, V, 162.
Anasa armigera, XIX, 32.
tristis, egg, XIX, 22.
nymph, XIX, 23.
adult, XIX, 24.
Aspidiotus ostreæformis, scales, XX, 77.
larva, XX, 79.
♂ and ♀, XX, 80.
last segment, XX, 81.
perniciosus, III, frontispiece.
appearance on bark, III, 36.
adult male, III, 42.
adult female, III, 43.
development of male, III, 41.
young, III, 39.
Blissus doriæ, adults, XV, 76.
stages, XV, 76.
leucopterus, stages, XV, 19.
long-winged, XV, 20.
short-winged, XV, 20.
on corn plant, XV, 28.
Brachyrhynchus granulatus, XV, 65.
Cicada septendecim, transformations, XIV, frontispiece.
work of, XIV, pl. i.
♂ and ♀, XIV, 18.
head and thorax, XIV, 51.
head, front view, XIV, 52.
head and thorax parts, XIV, 53.
side view, XIV, 54.
abdomen of ♀, XIV, 54.
ovipositor of, XIV, 54.
section of ovipositor, XIV, 55.
musical apparatus, XIV, 56.
pupal galleries, XIV. 64,
clay building, XIV, 66.
huts, XIV, pls. ii, iii.
egg punctures. XIV, 76.
scars, XIV, 76, 77.
egg-nest, XIV, 79.
egg, XIV, 80.
newly hatched larva, XIV, 81.
first larval stage, XIV, 86.
second larval stage, XIV, 87.
third larval stage, XIV, 88.
fourth larval stage, XIV, 88.
first pupal stage, XIV, 89.
Cimex. *See* Acanthia.
Conorhinus sanguisuga, pupa and adult, IV, 39.
larva and egg, IV, 40.
beak, IV, 41.

Conorhinus sanguisuga, adult, V, 164.
nymph, and adult, XXII, 28.
nymph and egg, XXII, 29.
head XXII, 30.
Corimelæna pulicaria, XV, 65.
Coriscus subcoleoptratus, long and short winged, XXII, 26.
Entilia sinuata, adult, nymph, and eggs, XXX, 76.
larval stages, XXX, 77.
Gargaphia angulata, adult, XXIII, 33.
Halticus uhleri, XIX, 60.
Lecanium nigrofasciatum, XVIII, 27.
leg and antenna, XVIII, 28.
Leptoglossus oppositus, XIX, 44.
phyllopus, XIX, 46.
Melanolestes abdominalis, ♂ and ♀, XXII, 26.
Milyas cinctus, XV, 54.
Nectarophora destructor, winged and apterous female and nymph, XXIII, 36.
Nysius angustatus, XV, 64.
Olliffiella cristata, galls of, VII, 77.
Piesma cinerea, XV, 65.
Pulvinaria acericola, XVII, 57.
egg and larvæ, XXII, 17.
larva third stage, XXII, 18.
♂ pupa, XXII, 19.
hibernating ♀, XXII, 19.
full-grown ♀, XXII, 20.
♀ with egg-sac, XXII, 21.
innumerabilis, XVII, 57.
newly hatched young, XXII, 8.
♂ larva, second stage, XXII, 9.
♀ larva, third stage, XXII, 10.
♀ larva, fourth stage, XXII, 11.
young hibernating ♀, XXII, 12.
gravid ♀, XXII, 12.
adult ♂, XXII, 13.
adult ♀, XXII, 14.
♀ with egg-sac, XXII, 14.
Rasahus biguttatus, XXII, 27.
Reduvius personatus, XXII, 24.
Rhopalosiphum violæ, winged and wingless females and nymphs, XXVII, 44.
Triphleps insidiosus, XV, 53.
Xylococcus betulæ, XVIII, 14.
end of body, second stage, XVIII, 21.
end of body, third stage, XVIII, 22.
end of body, fourth stage, XVIII, 22.
end of body of female, XVIII, 21.
male, XVIII, 25.
female, XVIII, 23.
first stage, XVIII, 20.
second stage, XVIII, 22.

COLEOPTERA.

Agrilus anxius, XVIII, 48.
work of, XVIII, 45.
larval galleries, XVIII, 45.

Agrilus bilineatus, VII, 71.
Agriotes mancus, beetle and larva, XXVII, 77.
Allorhina nitida, X, 21.
Anthrenus scrophulariæ, IV, 58.
Aramigus fulleri, different stages, XXVII, 89.
Aræcerus fasciculatus, VIII, 36.
Attagenus piceus, IV, 61; VIII, 18.
Bruchus chinensis, VIII, 25.
4-maculatus, VIII, 25.
Calosoma calidum, adult and larva, XXIX, 37.
Cerotoma trifurcata, IX, 67.
Ceutorhynchus rapæ, work of, XXIII, 40.
beetle, larva, and pupa, XXIII, 43.
Corthylus columbianus, VII, 17.
galleries of, VII, 18.
punctatissimus, VII, 16.
ambrosia of, VII, 17.
galleries of, VII, 17.
Crioceris 12-punctata, egg, X, 58.
Dendroctonus frontalis, VII, 73.
galleries of, XXVIII, pl. viii.
work of, XXVIII, pl. xii.
piceaperda, larva, pupa, and adult, XXVIII, pl. ii.
galleries and mines of, XXVIII, pls. iii, iv, v.
dormant and active periods, XXVIII, 19.
terebrans, work of, XXVIII, pl. xii.
Dermestes lardarius, IV, 108.
Diabrotica vittata, X, 26.
head of larva, X, 28.
egg, XIX, 48.
Disonycha xanthomelæna, XIX, 81.
Dryocœtes picea, work of, XXVIII, pl. viii.
Echocerus cornutus, IV, 115.
Elaphidion inerme, XVIII, 41.
mucronatum, XVIII, 43.
subpubescens, work of, XVIII, 41.
villosum, XVIII, 36.
Epicærus imbricatus, XIX, 62.
attacked by fungus, XXIII, 32.
Epilachna borealis, XIX, 11.
work of, XIX, 14.
Epitrix cucumeris, XIX, 89.
parvula, X, 80.
Euphoria inda, XIX, 68.
Gnathotrichus materiarius, VII, 30.
gallery of, VII, 30.
Haltica ignita, beetle, egg-mass, larva, and pupa, XXIII, 70.
abdominal segments, XXIII, 73.
Hoplia callipyge, beetle, XXVII, 97.
Hyperaspis signatus, larvæ feeding on Pulvinaria, XXVI, 18.
Lachnosterna arcuata, XIX, 74.
sexual characters, XIX, 75.
egg, larva, pupa, and beetle, XXVII, 75.
fusca, sexual characters, XIX, 75.

Lasioderma serricorne, IV, 126.
head of larva, IV, 126.
Lixus concavus, work of, XXIII, 61, 67.
beetle, egg, larva, and pupa, XXIII, 62.
Macrobasis unicolor, XXX, 23.
Magdalis ænescens, insect, larva, and pupa, XXII, 39.
work of, with insect in situ, XXII, 40.
Monarthrum fasciatum, VII, 28.
gallery of, VII, 26.
mali, VII, 28.
gallery of, VII, 27.
ambrosia of, VII, 27.
Necrobia rufipes, IV, 105.
Nodonota puncticollis, VII, 60.
Pentilia misella, III, 52.
Phlœotribus picea, work of, XXVIII, pl. xi.
Pityophthorus cariniceps, work of, XXVIII, pl. viii.
Platypus compositus, VII, 14.
ambrosia of, VII, 16.
larva, VII, 15.
work of, VII, 14.
Polygraphus rufipennis, galleries of, XXVIII, pl. 9.
Rhynchites bicolor, XXVII, 99.
Silvanus bicolor, VIII, 11.
gossypii, VIII, 13.
mercator, VIII, 12.
surinamensis, IV, 121; VIII, 12.
Sitodrepa panicea, IV, 124.
head of larva, IV, 125.
Spermophagus pectoralis, female and infested seed, XXIII, 38.
Systena blanda, larva, adult, and eggs, XXIII, 22.
tæniata, dark variety, XXIII, 23.
Tenebrio molitor, IV, 116.
obscurus, IV, 118.
Tenebroides mauritanicus, IV, 123.
Tetropium cinnamopterum, mines of, XXVIII, pl. x.
Tomicus picea, work of, XXVIII, pl. viii.
Tribolium confusum and ferrugineum, IV, 113.
Trichius piger, XXVII, 101.
Xyleborus celsus, VII, 22.
ambrosia of, VII, 24.
gallery of, VII, 23.
dispar, VII, 22.
gallery of, VII, 22.
fuscatus, VII, 21.
perforans, VII, 21.
pubescens, VII, 19.
gallery of, VII, 19.
ambrosia of, VII, 20.
xylographus, VII, 24.
gallery of, VII, 25.
ambrosia of, VII, 25.
Xylocrius agassizii, adult, larva, and pupa, XXIII, 90.
stem with larva, XXIII, 91.
work of, XXIII, 91.

Xyloterus bivittatus, VII, 28.
work of, XXVIII, pl. xi.
politus, VII, 28.
retusus, gallery of, VII, 29.
ambrosia of, VII, 30.

LEPIDOPTERA.

Anarsia lineatella, larva and work of, X, 10.
larva and pupa, X, 11.
moth, X, 12.
egg and young larva, X, 13.
Boarmia plumigeraria, VII, 66.
larva, VII, 65.
Chilo infuscatellus, X, 34.
Diatræa striatalis, X, 32.
Elasmopalpus lignosellus, antennæ and mouth parts, XXIII, 19.
moth, larva, and cocoon, XXIII, 20.
work in cornstalk, XXIII, 21.
Ephestia cahiritella, VIII, 8.
Euptoieta claudia, different stages, XXVII, 82.
Grapholitha schistaceana, X, 35.
Hellula undalis, XIX, 54.
venation, head, and antennæ, XXIII, 57.
Hydrœcia immanis, VII, 40.
Hypena humuli, VII, 44.
Laphygma frugiperda, eggs and young larva, XXIX, 15.
head of larva, XXIX, 16.
moth, larva, and pupa, XXIII, 81; XXIX, 14.
Laverna herellera, X, 37.
Leaf-miner in apple, X, 88.
Leucania unipuncta, larva and head, XXIX, 16.
Loxostege obliteralis, different stages, XXVII, 104.
similalis, different stages, XXVII, 9.
Melittia satyriniformis, eggs and larvæ, XIX, 35.
stages, XIX, 36.
Monoptilota nubilella, moth, larva, cocoon, and gall, XXIII, 11.
Nephopteryx rubrizonella, X, 39.
Noctua c-nigrum, moth and larva, XXVII, 54.
Penthina nimbatana, different stages, XXVII, 85.
Peridroma saucia, moth, eggs, and larva, XXVII, 51; XXIX, 47.
egg mass on cowpea leaf, XXIX, 48.
larva, XXIX, 48.
Phlyctænia rubigalis, in different stages, XXVII, 8.
Pionea ferrugalis, venation of wings, XXVII, 8.
Plathypena scabra, moth, eggs, and larvæ, XXX, 46.
Plodia interpunctella, IV, 119.
Polygonia comma, VII, 50.
interrogationis, VII, 48.
Porthetria dispar, female moth, XI, 5.
male moth, XI, 6.
caterpillar, XI, 7.
pupa, XI, 8.
bands to catch, XI, 18.

Prodenia commelinæ, eudiopta, and ornithogalli, XXVII, pl. 4.
moth and larvæ, XXVII, 60.
Pyralis farinalis, IV, 119.
eggs and larva, IV, 120.
Scirpophaga intacta, X, 33.
Sesia rutilans, adults, larva, pupa, and pupa shell, XXIII, 89.
Tinea pellionella, IV, 63.
Tineola biselliella, IV, 66.
Trichophaga tapetzella, IV, 67.

DIPTERA.

Ædes sapphirinus. *See* Uranotænia.
Anopheles, resting positions, XXV, 33, 34.
crucians, adult female, XXV, 44.
punctipennis, head of full-grown larva, XXV, 41.
adult female, XXV, 43.
quadrimaculatus, adults, XXV, 32.
egg mass, XXV, 35.
eggs, XXV, 35.
newly hatched larva, XXV, 36.
half-grown larva, XXV, 37.
full-grown larva, XXV, 39.
pupa, XXV, 40.
Cecidomyia destructor, XVI, pls. i, ii.
genital organs, XVI, 15.
egg parasite of Cicada, XIV, 97.
Chrysops fugax, V, 71.
æstuans, egg mass, V, 71.
univittatus, larva, V, 70.
vittatus, larva, V, 70.
Compsomyia macellaria, V, 130, 131.
egg, V, 132.
egg mass, V, 132.
head, V, 131.
larva, V, 132.
puparium, V, 132.
Culex, resting position, XXV, 33, 34.
pungens, adult, IV, 10; V, 26; XXV, 27.
eggs and young larvæ, IV, 11; XXV, 23.
head of larva, IV, 13.
head and mouth of larva, XXV, 24.
half-grown larva, XXV, 37.
larva and pupa, IV, 15; V, 27; XXV, 26.
pupa, XXV, 40.
sollicitans, XXV, 28.
Cuterebra, larva, V, 109.
cuniculi, V, 108.
larva, V, 109.
emasculator, V, 106.
horripilum, V, 109.
Dermatobia, larva, V, 113.
noxialis, larva, V; 112.
Diplosis violicola, XXII, 49; XXVII, 48.
Drosophila ampelophila, IV, 110.
adult, larva, and puparium, XXX, 42.

Euphorocera claripennis, adult and puparium, XXX, 25.
Gastrophilus equi, V, 78.
in stomach of horse, V, pl. i.
Hæmatobia serrata, V, 114.
detail of larva, V, 120.
fly resting, V, 117.
heads, V, 118.
on cow horn, V, 118.
Hippelates flavipes, V, 134.
plebejus, V, 135.
Hippobosca equina, V, 137.
Homalomyia brevis, adult and larva, XXX, 43.
Hypoderma bovis, V, 95.
larvæ, V, 96.
puparium, V, 97.
lineata, eggs, V, 99.
female, V, 101.
larvæ, V, 100.
ovipositor, V, 93.
Lucilia cæsar, adult, XXX, 26.
Megarhinus rutilus, adult female, XXV, 46.
Melophagus ovinus, V, 138.
Morellia micans, adult and puparium, XXX, 44.
Musca domestica, adult, larva, and puparium, XXX, 41.
adult, puparium, IV, 43.
larva, IV, 45.
pupa, IV, 46.
Neocerata rhodophaga, XXII, 45.
Nycteriba, V, 140.
Œstrus ovis, V, 103.
Piophila casei, IV, 103.
Psorophora ciliata, XXV, 45.
Pulex bruneri, V, 150.
howardi, V, 149.
inæqualis, V, 152.
irritans, V, 140, 147.
serraticeps, adult, V, 151.
egg, adult, IV, 25.
larva, IV, 27.
Sarcophaga assidua, adult, larva, and puparium, XXX, 25.
carnaria, V, 121.
sarraceniæ, adult, larva, and puparium, XXX, 24.
Sarcopsylla gallinacea, male, V, 145.
female, V, 146.
penetrans, V, 143.
Scatophaga furcata, adult, XXX, 44.
Sciara inconstans, different stages, XXVII, 109.
Simulium, eggs of, V, 33.
invenustum, X, 68.
meridionale, adult, X, 68.
breathing organs, V, 34.
larva, V, 52.
male, V, 54.
markings, V, 54.
pupa, V, 53.

Simulium, ornatum, V, 39.
head of larva, V, 40.
pecuarum, fan of, V, 34.
female, V, 46.
head of larva, V, 45.
heads, V, 47.
larva, V, 44.
markings, V, 47.
proleg of, V, 34.
pupa, V, 46.
tip of abdomen, V, 45.
piscicidium, V, 56.
sp., details, V, 58.
Stomoxys calcitrans, adult, larva, and puparium, XXX, 43.
Tabanus atrata, V, 61.
egg mass, V, 62.
larva, V, 61.
lineola, V, 64.
pupa, V, 64.
details, V, 65.
stygius, larva, V, 67.
tail, V, 68.
Typhlopsylla americana, V, 154.
assimilis, V, 153.
Uranotænia sapphirinus, XXV, 47.
Winthemia 4-pustulata, adult, larva, and puparium, XXIX, 35.

HYMENOPTERA.

Aphelinus diaspidis, III, 51.
Apis dorsata, I, pl. i.
florea, worker cells, I, 13.
comb of, I, 14.
indica, worker cells, I, 12.
mellifica, I, pl. 1.
worker cells, I, 15.
digestive system, I, pl. ii.
ovaries, I, 14.
head of, I, 20.
legs of, I, 21.
tongue of, I, 22.
wax disks, I, 26.
Bæotomus subapterus, XVI, 32.
Bracon simplex, cocoons of, XXVIII, pl. vii.
Emphytus canadensis, female, larva, pupa, and cocoon, XXVII, 27.
violet leaves showing injury from, XXVII, 28.
Entedon epigonus, XVI, 40.
Eunotus lividus, XXII, 15.
Eupelmus allynii, XVI, 34.
Euplectrus comstockii, XXIX, 37.
Habrolepis dalmanni, XVII, 15.
Hadrobracon hebetor, VIII, 39.
Lathromeris cicadæ, XIV, 97.

Megastizus carrying Cicada, XIV, 98.
burrows, XIV, 98.
egg on Cicada, XIV, 99.
larva on Cicada, XIV, 99.
pupa, XIV, 100.
spinning cocoon, XIV, 100.
cocoon, XIV, 101.
Merisus destructor. XVI. 31.
Monomorium minutum, IV, 97.
pharaonis, IV, 96.
Ophion antankarus, wings of, XXX, 82.
Phanurus tabanivorus, V, 63.
Platygaster herricki, XVI, 35.
Polistes bellicosus, XXIX, 36.
Tetramorium cæspitum, IV, 98.
Tetrastichus productus, XVI, 37.

MISCELLANEOUS.

Acacia constricta, I, pl. vi.
Apiary in California, I, 39.
Florida, I, 38.
Maryland, I, frontispiece.
Vermont, I, 110.
Apple, leaf miner in, X, 88.
Aster ericoides, I, 64.
Bacillus alvei, I, pl. xi.
Bee keeping:
comb building, I, 27.
brood apartment, I, 29.
use of veil and smoker, I, 21.
removing comb, I, 32.
tilting comb, I, 33.
reverse side of comb, I, 33.
examining comb, I, 33.
Quinby frames, I, 34.
box hive, I, 37.
frame hive, I, 37.
movable-comb hive, I, 41.
Dadant-Quinby hive, I, 41.
elevated, I, 82.
open, I, 46.
Langstroth frame, I, 42.
form to nail frames, I, 42.
lock-joint chaff hive, I, 43.
nailing hives, I, 43.
tin frame rest, I, 44.
Langstroth hive, section, I, 45.
Nonpareil hive, I, 46.
Bingham bee smoker, I, 48.
reversible extractor, I, 49.
Quinby uncapping knife, I, 49.
Bingham and Hetherington uncapping knife, I, 49.
wax extractor, I, 50.
Simplicity feeder, I, 51.

Bee fruit-jar feeder, I, 51.
Porter spring escape, I, 52.
Daisy foundation fastener, I, 53.
fastening starter, I, 53.
wire embedder, I, 54.
comb-foundation machine, I, 55.
transferring bees, I, 71.
transferred comb, I, 73.
extracting honey, I, 77.
V-grooved sections, I, 80.
super with sections, I, 80.
Langstroth hive with surplus case, I, 83.
honey shipping cases, I, 83.
Boardman solar wax extractor, I, 85.
comb with worker brood and queen cells, I, 88.
queen cells, I, 89.
Benton queen cage, I, 92.
caging a queen for mailing, I, 92.
queen-introducing cage, I, 94.
hiving a swarm, I, 96.
Simmins nonswarming system, I, 103.
beehives with Langdon nonswarmer, I, 104.
percolator for winter food, I, 107.
American straw hive, I, 108.
Davis hive packed for winter, I, 108.
double-walled hive for winter, I, 109.
Cheshire antirobbing entrance, I, 117.
Bee plants:
Acacia constricta, I, pl. vi.
Aster ericoides, I, 64.
Brassica napus, I, 60.
Echium vulgare, I, pl. viii.
Epilobium angustifolium, I, 57.
Kalmia latifolia, I, 63.
Lathyrus sylvestris wagneri, I, 59.
Medicago sativa, I, pl. iii.
Melilotus alba, I, pl. v.
Onobrychis sativa, I, pl. iv.
Polygonum sachalinense, I, 61.
Prosopis juliflora, I, pl. vii.
Pyrus malus, I, 63.
Trifolium hybridum, I, pl. x.
incarnatum, I, pl. ix.
Vicia villosa, I, 61.
Brassica napus, I, 60.
Diagram illustrating method of determining cubic contents of greenhouses, XXVII, 23.
Dipping vat, V, 283.
Echium vulgare, I, pl. viii.
Epilobium angustifolium, I, 57.
Fumigating box, showing trays and coleus cuttings, XXVII, 21.
Girdled trees, XXVIII, 32.
Hand sprayer, XXVII, 41.
parts of, XXVII, 41.

Hopperdozer, XXX, 19.
Kalmia latifolia, I, 63.
Lantern trap for insects, IX, 75.
Lathyrus sylvestris wagneri, I, 59.
Lime, sulphur, and salt wash, trees sprayed with, XXX, pl. i.
Lime wash, trees sprayed with, XXX, pl. ii.
Medicago sativa, I, pl. iii.
Meliotus alba, I, pl. v.
Nozzle, greenhouse, XXVII, 42.
Oil emulsions, device for preparing, VI, 94.
Onobrychis sativa, I, pl. iv.
Patterson tarred sheet, XXX, 18.
Peas, saved by brush and cultivator, XXVI, pl. ii.
pan, XXVI, pl. ii.
spraying, XXVI, pl. i.
with tobacco-whale-oil soap, XXVI, pl. i.
Polygonum sachalinense, I, 61.
Prosopis juliflora, I, pl. vii.
Pyrus malus, I, 63.
Spruce, dead, XXVIII, pl. xiv.
infested with plant lice and caterpillars, XXVIII, pl. xiii.
of Maine, XXVIII, pl. i.
Trifolium hybridum, I, pl. x.
incarnatum, I, pl. ix.
Vicia villosa, I, 61.
Violet house prepared for fumigation, XXVII, 24.
leaves showing injury by the greenhouse leaf tyer, XXVII, pl. i.
"gallfly" larvæ, XXVII, pl. iii.
Violets showing injury by plant-lice, XXVII, pl. ii.

GENERAL INDEX.

[Roman numerals refer to number of bulletin.]

Ablerus clisiocampæ, parasite of Aspidiotus forbesi, VI, 75.
Acanthia columbarius, hirundinis, and pipistrelli, mention of, V, 159, 162.
hirundinis, habits of, V, 161.
inodora, habits of, V, 160.
lectularius, bite of, IV, 36.
life history of, IV, 37; V, 157.
remedies against, IV, 37; V, 159.
pipistrelli, in America, XVIII, 97.
Acanthocinus nodosus, in pine, VII, 74.
Acarus, feeding on Cicada eggs, XIV, 101.
Acemyia dentata, parasite of Melanoplus differentialis, XXX, 25.
Acridium purpuriferarum, injurious to crops in South Africa, IX, 34.
Adalia bipunctata, feeding on Nectarophora destructor, XXVI, 71.
variation in, XVII, 59.
destroying plant lice, XXX, 90.
Adimonia tanaceti, attacking potatoes in Norway, IX, 80.
Æthriostoma undulata, injuring wheat, VIII, 14.
Agelœus phœniceus, eating larvæ of cotton-wood leaf-miner, VII, 84.
Agrilus, food plants of N. American species, XXII, 64.
anxius, destructive to birch, XVIII, 44.
injury by, XXII, 64.
bilineatus, injury by, XXII, 66.
killing chestnut trees, VII, 67.
otiosus, injury by, XXII, 65.
Agriotes lineatus, not common in Norway, IX, 79.
mancus, XXVII, 77.
obscurus, injuring cereal crops, IX, 79.
Agromyza æneiventris, in sunflower, XX, 72.
Alaus oculatus, in chestnut, VII, 71.
Aletia argillacea, attracted to lights, XXX, 85.
method of treatment in Texas, XVIII, 99.
Allograpta obliqua, feeding on Nectarophora destructor, XX, 97; XXVI, 71.
Allorhina mutabilis, damage by in Arizona, XXII, 104.
nitida, effect of cold winter on, XXII, 55.
injuring grapes in Georgia, XX, 57.
tomatoes, IX, 42.
violets, XXVII, 76.
in 1900, XXX, 68.
Alsophila pometaria, on Negundo in Canada, XXVI, 96.
Amblyomma devium, notes on, XXVI, 47.
hebræum, life history of, XXVI, 41.
unipunctata, habits of, V, 261.

Ambrosia, nature of, VII, 10.
beetles, characters and habits of, VII, 9.
injuries caused by, VII, 12.
remedies for, VII, 13.
American vines for Switzerland, XXII, 103.
Amphicerus bicaudatus, an enemy of stored lumber, XIX, 98.
infesting apple twigs in Georgia, XX, 58.
Anabrus, abundant in southern Idaho in 1895, VII, 34.
Anaphes gracilis, parasite of San Jose scale, III, 51; XXVI, 73.
Anarsia lineatella, abundant in Colorado, IX, 77; XXVI, 78.
notes on, IX, 71.
in California, XXVI, 92.
notice of, IX, 54.
Anasa armigera, account of, XIX, 28.
effect of cold winter on, XXII, 56.
in 1900, XXX, 67.
tristis, damage by, in Georgia, XX, 59.
life history of, XIX, 20.
Anisopteryx vernata=Paleacrita.
pometaria=Alsophila.
Anistrona gigas, hosts of, V, 246.
Anomæa laticlavia, note on, XXX, 84.
Anomala binotata, injury by, in Maryland, XXVI, 84.
marginata, injurious in Virginia, XXII, 108.
undulata, stripping plum trees in Ohio, XVII, 98.
Anopheles, distribution of species in United States, XXV, 44.
quadrimaculatus, life history of, XXV, 32.
Anthomyia brassicæ, injuring cabbage in Norway, IX, 79.
Anthonomus nigrinus, on eggplant, IX, 24.
pomorum, attacking apple in Norway, IX, 80.
signatus, damage by, VII, 78.
in Maryland, VI, 65; IX, 81; XX, 64.
Anthrenus scrophulariæ, feeding on vegetable matter, VIII, 14.
habits of, IV, 58.
remedies for, II, 38; IV, 59.
varius, feeding on dried plant, VIII, 14.
verbasci, feeding in "middlings," II, 37.
on vegetable substances, VIII, 22.
in various foods, IV, 129.
Ants, remedies against, IV, 98; XVIII, 99; XXX, 97.
cutting, in Texas, XXX, 85.
Aonidia fusca, scale on peach in Australia, VII, 81.
Apanteles carpatus, parasite of Pyralis farinalis, VIII, 42.
parasites of Tinea pellionella, IV, 66.
ephestiæ, parasite of Ephestia kuehniella, VIII, 41.
glomeratus, in 1900, XXX, 70.
laphygmæ, parasite of Laphygma frugiperda, XXIX, 36.
Aphæreta muscæ, bred from dead grasshoppers, VI, 92.
pallipes, parasite of Helicobia helicis, XXX, 26.
Aphelinus fuscipennis, parasite of San Jose scale, III, 51; VI, 47; XXVI, 73.
mytilaspidis, parasite of Mytilaspis pomorum, XXVI, 95.
San Jose scale, III, 51; XXVI, 73.
Aphididæ, abundant in Canada after severe winter, IX, 19.
Colorado in 1897, IX, 78.

Aphididæ, effect of hot weather on, IX, 19.
scarcity of, in the Tropics, IX, 19.
Aphidius fletcheri, parasite of Nectarophora destructor, XXIII, 36.
washingtonensis, bred from Nectarophora destructor, XXVI, 70.
Aphis brassicæ, abundant in Maryland in 1897, IX, 81.
in Colorado, XXVI, 79.
not abundant in Georgia, XX, 59.
forbesi, destructive in Maryland, XX, 66.
gossypii, abundant on cantaloupe, IX, 81.
damage by, in Maryland, VI, 65; XX, 65; XXVI, 82.
injurious in Georgia, XX, 59.
in 1900, XXX, 71.
mali, attacking apples in Norway, IX, 80.
killed by hydrocyanic-acid gas, XVII, 42.
scarcity of, in New York, VI, 54.
unusually abundant in Maryland, XXVI, 80.
work of, in Delaware, XXVI, 67.
persicæ, in Massachusetts, XXX, 98.
persicæ-niger, abundant in Maryland in 1897, IX, 81.
prunicola, abundant in Maryland, XVII, 98.
killed by hydrocyanic-acid gas, XVII, 42.
on peach in Maryland, XXVI, 84.
rare in Maryland, XX, 66.
rosæ, injuring roses in Norway, IX, 80.
ulmaræ, injurious in Egypt, XXII, 100.
Aphodius granarius, on violets, XXVII, 83.
Aphycus flavus, parasite of Pulvinaria acericola, XXII, 23.
hederaceus, parasite of Pulvinaria acericola, XXII, 23.
pulvinariæ, hosts of, VII, 63.
parasite on plum scale, II, 90.
Apiary, establishing an, I, 35.
Apiculture, books relating to, I, 118.
Apion segnipes, bred from seeds of Tephrosia spicata, VII, 85.
Apis dorsata, I, 13.
florea, I, 13.
indica, I, 12.
mellifica, I, 15.
in Porto Rico, XXII, 90.
Apoderus coryli, injuring Alnus in Norway, IX, 80.
Aræcerus fasciculatus, habits and life history of, VIII, 36.
in groceries, IV, 129.
Aramigus fulleri, account of, XXVII, 88.
in the Hawaiian Islands, XXX, 88.
Archenomus bicolor, parasite of Diaspis pentagona, XVII, 101.
Archytas analis, parasite of Peridroma saucia, XXIX, 61.
Arctia nais, on violets, XXVII, 82.
Argas americana, pest of chickens, V, 256.
moubata, mention of, V, 256.
persicus, mention of, V, 256.
notes on, XXVI, 48.
reflexus, parasite on pigeons, V, 255.
talaje, mention of, V, 256.
Argynnis (species), on violets, XXVII, 79.
Armadillidium armadillo, on violets, XXVII, 82.

Arphia tenebrosa, abundant in Montana in 1895, VII, 33.
Arrhenophagus chionaspidis, parasite of Aspidiotus forbesi, VI, 75.
Aulacaspis rosæ, XVII, 100.
Arsenate of barium, value as an insecticide, VI, 27.
lead, an improvement in manufacture of, XX, 102.
preparation and use of, IX, 46.
value as insecticide, II, 24, 61, 67.
Arsenic, amount of on a sprayed apple, VI, 53.
Arsenicals and lime, value of, IX, 63.
effect of, on foliage and larvæ, VI, 30.
Arsenite of copper, as an insecticide, II, 25; XVII, 98.
Asecodes albitarsis, parasite of Magdalis ænescens, XXII, 43.
Orgyia leucostigma, IX, 16.
Aspidiotiphagus citrinus, parasite of San Jose scale, III, 51; XXVI, 73.
Aspidiotus æsculi, notice of, VI, 76.
ancylus, in Colorado, XXVI, 78.
Georgia, XXVI, 50.
Massachusetts, XVII, 64.
on oak in Illinois, VI, 76.
original home of, XX, 39.
aurantii, cause of russetness on oranges, VI, 76.
damage by, in South Africa, IX, 36.
camelliæ, found on trees from New Zealand, VI, 76.
in Georgia, XXVI, 51.
comstocki, characters and habits of, VI, 75.
cydoniæ, in Georgia, XXVI, 50.
fernaldi, in Massachusetts, XVII, 64.
ficus, in Georgia, XXVI, 50.
forbesi, effect of cold on, XX, 85.
habits of, and damage by, VI, 74.
in Georgia, XXVI, 49.
Massachusetts, XVII, 64.
West Virginia, XVII, 45.
on apple, pear, and cherry trees, IX, 85.
parasites of, VI, 75.
hederæ, in Georgia, XXVI, 50.
effect of cold on, XX, 84.
on plants in greenhouse, VI, 76.
juglans-regiæ, common on silver maple, VI, 76.
in Georgia, XXVI, 50.
New York, VI, 60.
nerii=hederæ.
obscurus, in Georgia, XXVI, 50.
osborni, in Georgia, XXVI, 50.
ostreæformis, account of, XX, 76.
perniciosus, bibliography of, III, 74; XII, 27.
cooperation for control of, VI, 80.
description of, III, 46.
distinguished from allied scales, XII, 11.
effect of cold on, XX, 82.
food plants of, III, 37; XII, 12.
fungous disease of, III, 54; IX, 27.
German edict against introduction of, XII, 26.
in 1896-7, XII.

Aspidiotus perniciosus, in Alabama, III, 17.
Arizona, III, 17.
Australia, VII, 81.
British Columbia, III, 31.
California, III, 12, 18; XXVI, 92.
Canada, IX, 29.
Connecticut, XVII, 81.
Delaware, III, 18.
Florida, III, 19.
Georgia, III, 20; XXVI, 49.
Idaho, III, 21.
Indiana, III, 21.
Louisiana, III, 22.
Maryland, III, 24; VI, 64; IX, 82; XX, 66.
Massachusetts, III, 23; XVII, 63.
Michigan, IX, 27.
New Jersey, III, 27; XVII, 32.
New Mexico, III, 28.
New York, III, 27.
Ohio, III, 28; IX, 39.
Oregon, III, 29.
Pennsylvania, III, 29.
southeastern New York, VI, 59; XVII, 22.
the East, III, 12.
Virginia, III, 30.
Washington, III, 31.
West Virginia, III, 31; VI, 71; XVII, 44.
legislation against, VI, 82; XIII.
life history of, III, 38.
means of distribution, III, 49.
natural enemies of, III, 51; XII, 14.
on crab grass, IX, 82.
dried fruit, XVIII, 7.
milkweed, IX, 82.
original home of, III, 10; XX, 36.
relation of climate to spread of, III, 33; XII, 13.
remedies for, in East, III, 61; XII, 16.
West, III, 56.
sources of infestation, III, 14.
spring applications for, XXVI, 23.
work against, in Maryland, XXVI, 83.
Ohio, VI, 69.
rosæ. *See* Aulacaspis.
tenebricosus, in Georgia, XXVI, 50.
ulmi, notice of, VI, 76.
uvæ, in Georgia, XXVI, 50.
Association of Economic Entomologists, objects of, XXVI, 5.
proceedings of, II; VI; IX; XVII; XX; XXVI.
Atimia confusa, injuring rustic cedar fences, XXX, 92.
Atropates collinsi, a parasite of Pulvinaria innumerabilis, XXII, 15.
Atropos divinatoria, damage to books and household goods, IV, 80.
Atta insularis, habits of, XXII, 107.
Attagenus pellio, feeding on vegetable matter, VIII, 14.

Attagenus piceus, description of, VIII, 18.
effect of alternation of temperature on, IX, 19.
experiments with cold on, VI, 16.
feeding on flour, meal, and timothy seed, II, 37; VIII, 15.
habits of, IV, 61.
history of, in America, VIII, 17.
injuring bolting cloth, II, 37; VIII, 16.
in cereals, IV, 129.
remedies for, IV, 63.
Aulacaspis rosæ, in Georgia, XXVI, 51.
Iowa, VI, 79.
injuring raspberry and blackberry, VI, 77.
Bacillus insectorum, infesting the chinch bug, XV, 51.
Baterial disease of grasshoppers in Colorado, VI, 89.
Bæotomus subapterus, parasite of Hessian fly, XVI, 32.
Bassus lætorius, parasite of Allograpta obliqua, XXVI, 71.
Nectarophora destructor, XX, 98.
Bathythrix pimplæ, parasite of Orgyia leucostigma, IX, 16.
Batrachedra rileyi, bred from cotton bolls and from corn, VIII, 33.
Bee, Carniolan, I, 17.
colonies, increase of, I, 95.
common honey, I, 15.
Cyprian, I, 15.
German, I, 18.
Indian, I, 12, 13.
Italian, I, 16.
Bees, as cross fertilizers, I, 62.
colonies of, I, 19.
diseases and enemies of, I, 112.
drone, I, 30.
manipulating, I, 31, 69.
moving of, I, 37.
pasturage of, I, 56.
products of, I, 21.
robber, I, 116.
wintering of, I, 106.
worker, I, 29.
Belostoma americanum, hibernation of, XXII, 108.
Bird lice, general habits and remedies, V, 189.
Birds, eating Dendroctonus, XXVIII, 25.
that feed on hairy caterpillars, XX, 92.
See Insectivorous birds.
Bisulphide of carbon, fumigating with, XXX, 78.
Bittacus pilicornis, catching flies, VII, 86
Black flies, general account of, V, 31.
Black fly = Simulium molestum.
Black holes, what they are, VII, 9.
Blastophaga grossorum, notes on, XX, 29.
in California, present condition of, XXVI, 16.
Blastothrix longipennis, hosts of, VII, 63.
Blissus doriæ, habits of, in Europe, XV, 75.
leucopterus, condition of, in Ohio in 1897, IX, 39.
damage by, in New York, VI, 59.
distribution of, XV, 66.

Blissus leucopterus, enemies of, XV, 39.
food plants of, XV, 27.
full account of, XV.
in Ohio, II, 87; VI, 18, 66; XX, 55.
the northeastern United States and Canada, VI, 25.
insects mistaken for, XV, 64.
notes on, in Iowa, VI, 78.
on city lawns, XVIII, 97.
origin and distribution of, IX, 30; XV.
remedies for, XV, 54.
Blister beetle, new name for, XXII, 107.
Boarmia plumigeraria, life history of, VII, 64.
Bombyx rubi, injuring larch in Norway, IX, 80.
Boophilus bovis, history of, V, 257.
life history of, V, 258.
prevention and remedy, V, 260.
relation to Texas fever, V, 260.
Bordeaux mixture and kerosene emulsion, XXX, 37
Bot flies, general habits of, V, 72.
larvæ of, V, 72.
Botis harveyana = Phlyctænia rubigalis, XXVII, 9.
Botys marculenta = Loxostege obliteralis, XXVII, 103.
oblunalis = Phlyctænia rubigalis, XXVII, 9.
Brachyrhynchus granulatus, mistaken for chinch bug, IX, 41.
Brachysticta fidiæ, parasite on eggs of Fidia viticida, VI, 69.
Brachytarsus alternatus, breeding in corn and peas, VIII, 31.
reared from galls on Ipomœa, XVII, 100.
variegatus, in stored wheat, VIII, 31.
Bracon brevicornis, parasite on Ephestia kuehniella, VIII, 40.
eurygaster, probable parasite of Elaphidion villosum, XVIII, 40.
parasite of Neoclytus erythrocephalus, VII, 72.
hebetor, parasite of Ephestia cahiritella, VIII, 39.
elutella, VIII, 40.
kuehniella, VIII, 38; XX, 67.
Galleria mellinella, VIII, 43.
Plodia interpunctella, VIII, 40.
mellitor, parasite of Steganoptycha sp., XXVI, 69.
rugator, parasite of Lixus mucidus, XXIII, 69.
simplex, parasite of Dendroctonus piceaperda, XXVIII, 24.
Bran-arsenic mash, use of, against grasshoppers, XXX, 96.
Braula, the bee-louse, I, 115.
British-American laws against injurious insects, XIII, 44.
Brochymena annulata, increase in Ohio, II, 90.
Bruchophagus funebris, bred from clover seed, VI, 73; XVII, 45.
Bruchus chinensis, habits of, in cowpea, VIII, 26.
obsoletus, bred from seeds of Tephrosia spicata, VII, 85.
obtectus, as a household insect, IV, 128.
development of, VIII, 29.
on cowpea, VIII, 29.
pisorum, as a household insect, IV, 128.
note on Canada, XXVI, 95.
quadrimaculatus, habits of, in cowpea, VIII, 27.
Bryobia pratensis, abundant in Colorado, XXVI, 79.
habits of, IV, 52.

Bryobia pratensis, remedies for, IV, 52.
Bucculatrix pomifoliella, not abundant in New York, VI, 54.
Buffalo gnats, general account of, V, 31.
life history of, V, 33.
losses from, V, 32.
preventives against, V, 36.
remedies for, V, 37.
Bumble bees, relation to red clover, VI, 73.
Bupalus piniarius, injuring pine in Norway, IX, 80.
Buprestid larva destructive to living white pine, XVII, 47.
Butterflies, scarcity of, in New York, VI, 55.
Byturus tomentosus, mention of, VIII, 14.
unicolor, mention of, VIII, 14.
on raspberry buds in New York, XVI, 17.
Cacœcia argyrospila, damage by, in Colorado, XXVI, 78.
injuring roses, XXVII, 88.
cerasivorana, oviposition of, XXVI, 33.
excessana, dangerous apple pest of New Zealand, VII, 82.
parallela, on roses, XXVII, 114.
responsa, dangerous apple pest of Australia, VII, 82.
rosaceana, damage to apple trees in New York, VI, 57.
destructive in Canada, XXVI, 94.
effect of cold winter on, XXII, 57.
in Delaware, XXVI, 68.
injuring roses, XXVII, 87.
in 1900, XXX, 68.
rosana, injuring roses, XXVII, 88.
semiferana, notes on, in Colorado, XXVI, 77.
Calandra granaria, in foods, IV, 128.
oryza, in foods, IV, 128.
Calcium carbide against Phylloxera, XXX, 95.
California laws against injurious insects, XIII, 9.
wash, experiments with, against San Jose scale, III, 71.
Callidium æreum, on chestnut, VII, 72.
janthinum, an enemy of red cedar, XXI, 21.
injuring rustic cedar fences, XXX, 91.
Calliphora erythrocephala, found in houses, IV, 44.
vomitoria, habits of, V, 123.
Calosoma calidum, destroying cutworms, VI, 68.
preying on Laphygma frugiperda, XXIX, 36.
Calotermes castaneus, note on, XXX, 96.
Camnula pellucida, abundant in Wyoming in 1895, VII, 33.
Campodes flavicornis, on violets, XXVII, 82.
Canarsia hammondi, in Ohio, XX, 72.
Cankerworms, abundant in Ohio, XX, 68.
Caprifig experiments in California, XX, 28.
Carbide, use of calcium, XXX, 95.
Carcelia leucaniæ, parasite of Pyralis farinalis, VIII, 42.
Carneades insignata, injuring onions in Ohio, XXVI, 85.
tessellata, injuring onions in Ohio, XXVI, 85.
Carpocapsa pomonella, account of investigation in Idaho, XXX, 51.
attacking apples in Norway, IX, 80.
damage to apples and pears in Maryland, VI, 65.
in Colorado, XXVI, 77.

Carpocapsa pomonella, notes on, in California, XXVI, 92, 96.
Carpophilus hemipterus, in dried fruits, IV, 129.
Cathartus advena, in stored foods, IV, 129.
Catocala mœstosa, eaten by squirrels, XXX, 94.
Caulophilus latinasus, feeding on Indian corn and "Spanish peas," VIII, 30.
Cecidomyia brachyptera, injuring pine in Norway, IX, 80.
brassicæ, eating turnip seeds in England, IX, 26.
destructor, account of, in the United States, XVI.
appearance in Iowa, VI, 79.
bibliography of, XVI, 48.
damage by, in Manitoba, XXVI, 95.
Maryland, XVII, 94; XX, 65; XXVI, 82.
Ohio, II, 85; XX, 69; XXVI, 84.
distribution of, XVI, 10.
enemies of, XVI, 27.
food plants of, XVI, 25.
infesting barley in Norway, IX, 79.
life history of, XVI, 14.
remedies for, XVI, 41.
sp., on Negundo, XXVI, 96.
Cecidomyiid, gall of, on choke cherry, VI, 57.
Cemiostoma coffeella = Leucoptera.
Cenopsis pettitana, on roses, XXVII, 88.
recticulatana, on roses, XXVII, 88.
Cephenomyia sp., infesting deer, V, 105.
Ceratitis capitata, injuring peaches in South Africa, IX, 36.
Ceratopogon sp., rarity of, in New York, VI, 55.
Cerocephala elegans, parasite of Calandra oryzæ, VIII, 44.
Sitodrepa panicea, VIII, 45.
formiciformis, probably = C. elegans, VIII, 45.
Cerococcus quercus, abundance and probable value of, IX, 39.
Ceroplastes ceriferus, use of, IX, 39.
cirripediformis, in Georgia, XXVI, 53.
floridensis, mention of, IX, 39.
Cerotoma caminea = C. trifurcata.
trifurcata, abundant in Georgia, XX, 56.
damage by, in Maryland, XXVI, 81.
effect of cold winter on, XXII, 58.
habits and life history of, IX, 64.
injuring wax and lima beans, IX, 84.
observations on, XXIII, 30.
in 1900, XXX, 69.
Cetonia metallica, attacking potatoes in Norway, IX, 80.
Ceuthorhynchus, food habits of, XXIII, 50.
assimilis, eating turnip seeds in England, IX, 26.
rapæ, account of, XXIII, 39.
damage to cabbage, II, 90.
effect of cold winter on, XXII, 57.
Chætocnema confinis, injuring corn, IX, 22.
denticulata, abundant on barnyard grass, IX, 22.
injuring millet, XVII, 84.
parcepunctata, feeding on corn, IX, 22.
pulicaria, injuring corn, IX, 22.
millet, XVII, 84.

Chætocnema pulicaria, injuring young corn, IX, 81.
Chætogædia monticola, parasite of Peridroma saucia, XXIX, 62.
Chætospila=Cerocephala, VIII, 44.
Chaitophorus negundinis, damage by, in Canada, XXVI, 96.
Chalcis ovata, parasite of Orgyia leucostigma, IX, 16.
Chelymorpha argus, feeding on sweet potato, IX, 23.
on strawberry in Ohio, XVII, 99.
Chermes abietis, in West Virginia, XVII, 46.
Chilocorus bivulnerus, feeding on San Jose scale, III, 53; VI, 47.
Aspidiotus forbesi, VI, 75.
Myzus sp., XXVI, 68.
Pulvinaria innumerabilis, XXII, 12.
Chiloneurus albicornis, hosts of, VII, 63.
parasite of Pulvinaria acericola, XXII, 23.
Chion cinctus, bred from plum, XIX, 97.
Chionaspis americana, characters of, and habits, VI, 77.
in Georgia, XXVI, 52.
new localities for, XXVI, 84.
biclavis, in Mexico, on lime tree, VII, 87.
euonymi, in Georgia, XXVI, 52.
killed by hydrocyanic-acid gas, XVII, 42.
furfurus, broods of, VI, 77.
common in West Virginia, VI, 72.
in Georgia, XXVI, 51.
two-brooded in Maryland, XX, 67.
nyssæ, in Georgia, XXVI, 52.
pinifoliæ, destructive in Illinois, VI, 77.
prunicola, a synonym of Diaspis pentagona, XVII, 65.
salicis, mention of, VI, 77.
Chiropachys colon, parasite of Magdalis ænescens, XXII, 43.
Scolytus rugulosus, XIX, 97.
Chloëaltis viridis, damage by, in Mississippi, XXX, 29.
Chlorochara conica, habits of, XXII, 99.
Chlorops assimilis, injuring millet, XVII, 86.
pumilionis, attacking wheat in Norway, IX, 79.
Chorioptes auricularum, mention of, V, 264.
symbiotes, parasite of horse, ox, and goat, V, 264.
Chortophaga viridifasciata, damage by, in Mississippi, XXX, 29.
Chramesus icoriæ, in walnut in Ohio, XX, 72.
reared from walnut, XVII, 100.
Chremylus rubiginosus, parasite on Ephestia kuehniella, VIII, 40.
of Tinea granella, VIII, 43.
Chrysobothris femorata, bred from seasoned hickory, XVII, 46.
damaging quilts, XVIII, 100.
on chestnut, VII, 71.
6-signata, on chestnut, VII, 71.
Chrysomela exclamationis, feeding on sunflower, XVIII, 96.
Chrysopa oculata, feeding on Nectarophora destructor, XX, 98; XXVI, 71.
Chrysops costatus, V, 70.
fugax, V, 70.
hilaris, destroyed by kerosene, XX, 25.
niger, V, 70.
quadrivittatus, V, 70.
univittatus, V, 70.

Chrysops vittatus, V, 69.
Cicada septendecim, account of, XIV.
as an article of food, XIV, 72.
bibliography of, XIV, 119.
Brood XV in West Virginia, XVII, 48.
XIX in New York, XX, 62.
distribution of, XIV, 23.
Dr. Gideon B. Smith's chronology of, XIV, 142.
huts of, XIV, 63.
in Ohio in 1897, IX, 40.
life history of, XIV, 61.
natural enemies of, XIV, 95.
nomenclature of broods of, XVIII, 52.
races, broods, and varieties of, XIV, 12.
remedies for, XIV, 107.
song of, XIV, 57.
sting of, XIV, 59.
structure of, XIV, 50.
value of old records, XVIII, 59.
tredecim, relation to Cicada septendecim, XIV, 12.
Cimex lectularius = Acanthia.
Cladium pectinicornis, on rose, XXVII, 100.
Clausicella tarsalis, parasite of Pyralis farinalis, VIII, 42.
Cleigastra armillata, work of, in Norway, IX, 79.
Clisiocampa americana, abundance of, in New Hampshire, XVII, 76.
birds that feed on larvæ of, XX, 89.
common in Maryland, XXVI, 80.
injurious in New York, XVII, 20.
not abundant in New York, VI, 54.
parasites of, XVII, 77.
disstria, damage by, in New Hampshire, XVII, 77.
injurious in New York, XVII, 20; XX, 60.
in sugar-maple groves, XVII, 78.
Clothes moths, a new remedy for, XXII, 106.
species of, IV, 64.
remedies for, IV, 68.
Coccidæ, distribution of, II, 91.
of Georgia, list of, XXVI, 49.
Massachusetts, XVII, 61.
Porto Rico, XXII, 92.
on American fruit imported into Germany, XXII, 79.
regarding Australian and New Zealand species, VII, 81.
temperature control of, XX, 73, 82.
their enemies in California, VI, 46.
Coccinella 9-notata, feeding on Nectarophora destructor, XX, 97; XXVI, 71.
sanguinea, feeding on Nectarophora destructor, XXVI, 71.
Coccinellidæ, value of, against scale insects, VI, 48.
Coccophagus cognatus, hosts of, VII, 63.
flavoscutellum, parasite of Pulvinaria innumerabilis, XXII, 15.
on plum scale, II, 89.
fletcheri, hosts of, VII, 63.
fraternus, parasite of Pulvinaria acericola, XXII, 23.
gossypariæ, parasite of Gossyparia ulmi, XVII, 63.
lecanii, parasite of Pulvinaria innumerabilis, XXII, 13.

Coccophagus lecanii, parasite on plum scale, II, 90
Cockroaches, distribution and history of, IV, 85.
habits and life history of, IV, 86.
in South Australia, XXII, 95.
remedies for, IV, 93.
species of, IV, 90.
Cœnosia solita, preying on Sciara inconstans, XXVII, 112.
Colaspis brunnea, damaging potatoes, II, 90.
eating foliage of beans, IX, 21.
injuring strawberries, beans, and buckwheat, XX, 63; XXVI, 90.
injurious to corn, XX, 71.
tristis=Nodonota puncticollis.
Cold, amount necessary against household insects, VI, 14.
effect of, on insects, XXII, 51.
winters, effect of, XXII, 54.
Coleophora fletcherella, scarcity of, in New York, VI, 54.
Colias cæsonia, migration of, VII, 84.
Collections, improvement of, II, 92.
Colopha ulmicola, abundant in Maryland, XX, 65.
Colorado laws against injurious insects, XIII, 11.
Colpocephalum assimile, hosts of, V, 240.
flavescens, hosts of, V, 246.
funebre, host of, V, 247.
fuscipes, host of, V, 246.
laticeps, host of, V, 247.
longicaudum, hosts of, V, 214, 246.
minutum, parasite of the swan, V, 215.
ochraceum, host of, V, 246.
pingue, host of, V, 247.
pustulosum, host of, V, 246.
subpachygaster, host of, V, 246.
timidum, host of, V, 247.
unciferum, host of, V, 246.
uniforme, host of, V, 247.
Colydium lineola, in galleries of Xyleborus xylographus, VII, 26.
Comastes robustus, probably parasitic on Melissodes, VII, 86.
Common names of insects, XXVI, 97.
Compsomyia macellaria, account of, V, 124.
as a pest to domestic animals, V, 128.
man, V, 125.
life history of, V, 130.
remedies for, V, 132.
Conorhinus protractus, in Utah, XVIII, 101.
sanguisuga, bite of, IV, 39, 41.
habits of, V, 163; XXII, 28.
life history of, IV, 40.
remedies against, IV, 42.
Conotrachelus elegans, on pigweed, XVIII, 94.
nenuphar, abundant in Delaware, XXVI, 67.
bred from cherries, IX, 43.
damage to peaches, VI, 65.
in Maryland, IX, 82; XX, 64; XXVI, 83.
posticatus, bred from acorns of white oak, IX, 44.
Contagious diseases, parasites as carriers of, V, 19.

Cooperation among experiment-station workers, II, 10.
Copidosoma truncatella, parasite of Prodenia ornithogalli, XXVII, 71.
Corcyra cephalonica, in dried fruits, VIII, 10.
Coriscus ferus, attacking Leptoterna dolobrata, IX, 41.
subcoleoptratus, habits of, XXII, 26.
Corthylus columbianus, habits of, VII, 17.
punctatissimus, habits of, VII, 16.
Coruco=Acanthia inodora.
Corydalis cornuta, common names of, VII, 82.
Corymbites tarsalis, injuring apples in Canada, XXVI, 94.
Corythuca arcuata, injuring quince, XVIII, 101.
Cosmopepla carnifex, attacking mustard, XVIII, 100.
Cotton-field insects, XVIII, 85.
Cowpea, weevils in, VIII, 24.
Crambus caliginosellus, an enemy of tobacco, XX, 99; XXVI, 83.
damage by, in Maryland, XVII, 93; XX, 62.
injuring young corn, IX, 84.
sp., abundant in northern Ohio, II, 85.
Crayfish, carbon bisulphide for, II, 98.
Crepidodera rufipes, injuring peach in Maryland, XXVI, 84.
note on, XXX, 84.
Cricket, song of, IV, 54.
Crickets, damage by house, IV, 55.
Crioceris asparagi, found in West Virginia, XVII, 45.
hibernation of, VI, 62.
in Maryland, VI, 65; XX, 67; XXVI,
Michigan, XVIII, 94.
New York, VI, 59; XX, 62.
1900, XXX, 69.
spread of, in Ohio, VI, 67; XX, 71.
westward spread of, IX, 41.
12-punctata, in Maryland, VI, 65; XXVI, 81.
near New York City, XXII, 107.
spread of, in New Jersey, VI, 62.
New York, XX, 61.
1900, XXX, 69.
Cryptolæmus montrouzieri, used against Pulvinaria psidii in Hawaii, VI, 49.
Cryptomeigenia theutis, parasite of white grub, XIX, 79.
Cryptorhynchus bisignatus, on chestnut, VII, 71.
obtentus, on chestnut, VII, 71.
Crystal potash lye, experiments with, against San Jose scale, III, 70.
Ctenochiton perforatus, notes on, VII, 81.
Culex, distribution of species in the United States, XXV, 30.
impiger, note on, XXV, 29.
pungens, life history of, IV, 10; V, 26; XXV, 22.
sollicitans, notes on, XXV, 28.
tæniatus, note on, XXV, 29.
Culicidæ of the United States, XXV.
See Mosquitoes.
Cuterebra buccata, notice of, V, 110.
cuniculi, infesting rabbits, V, 109.
emasculator, infesting squirrels, V, 105.
fontinella, notice of, V, 110.
horripilum=cuniculi.

Cutworms, destroyed by Calosoma calidum, VI, 68.
in Ohio, II, 85.
very common in West Virginia, VI, 72.
Cyanide of potassium, use of, II, 24.
Cyllene picta, bred from Osage orange wood, IX, 42.
seasoned hickory, XVII, 46.
Cyrtoneura stabulans, bred from dead grasshoppers, VI, 92.
found in houses, IV, 44.
Cyrtoneurus mutabilis, puncturing the tubers of chufas, VII, 86.
Cyrtophorus verrucosus, on chestnut, VII, 72.
Cytodites nudus, parasite of chicken, V, 263.
Dactylopius adonidum, outbreak of, in New Zealand, VII, 81.
citri, killed by Orcus cæruleus, XVIII, 99.
iceryoides, should be D. aurilanatus, in California, VII, 82.
sacchari, in Porto Rico, XXII, 89.
sp., on pear roots, XX, 63.
virgatus, on violets, XXVII, 79.
Dacus cucurbitæ, injury by, in Hawaiian Islands, XXII, 93.
Dakruma coccidivora, feeding on Pulvinaria innumerabilis, XXII, 12.
Dasyllis tergissa, feeding on honey bee, XXII, 103.
note on, XXX, 84.
Datana integerrima, defoliating trees in Maryland, XX, 65.
Demodex folliculorum, habits of, V, 274.
Dendroctonus brevicomis, injury to yellow pine, XXI, 13, 20, 26.
frontalis, destroying coniferous trees, VII, 67.
piceaperda, habits and work of, XXVIII, 17.
means against, XXVIII, 42.
rufipennis, in New Hampshire, XVII, 67.
not certainly this species in New Hampshire, XVIII, 96.
similis, on red fir and larch, XXI, 10, 15, 21.
sp., infesting tide-land spruce, XXI, 15.
injurious to sugar pine, XXI, 14.
terebrans, injurious to many pines, XXI, 14.
Dendroides canadensis, in chestnut, VII, 71.
Dendrolene, use against elm-leaf beetle, VI, 45.
See Raupenleim.
Dermacentor americanus, habits of, V, 261.
reticulatus, mention of, V, 262.
Dermanyssus avium, habits of, V, 253.
gallinæ, habits of, and remedies for, V, 254.
Dermatobia cyaniventris, taken from arm of a sailor, VII, 86.
See Œstris hominis.
noxialis. *See* Œstris hominis.
Dermestes chinensis, damaging books, VIII, 14.
lardarius, burrowing in cork and wood, VIII, 14.
damage by, IV, 107.
remedies for, IV, 108.
vulpinus, burrowing in cork and wood, VIII, 14.
experiments with cold on, VI, 16.
Dermestidæ, granivorous habits of, VIII, 14.
herbivorous, habits of, II, 36.
Diabrotica 12-punctata, XX, 57.
injuring millet, XVII, 86.
observations on, XXVI, 35.

Diabrotica longicornis, spread of, in Ohio, XX, 69.
trivittata, food habits of, XIX, 51.
vittata, abundant in Maryland, IX, 81; XXVI, 83.
effect of cold winter on, XXII, 58.
egg of, XIX, 48.
especially injurious to melons, XX, 66.
in Colorado, XXVI, 80.
methods of controlling, XIX, 49.
Diacanthus æneus, injuring cereal crops in Norway, IX, 79.
Diaprepes abbreviatus, injuring guava, XXX, 97.
Diaspis amygdali = pentagona.
cacti, in Georgia, XXVI, 51.
pentagona, in Georgia, XXVI, 51.
Massachusetts, XVII, 64.
Ohio, XVII, 101.
experiments in spraying, XXX, 33.
rosæ. *See* Aulacaspis.
Diatræa saccharalis, abundant in Maryland, XVII, 93.
effect of cold winter on, XXII, 56.
in cornstalks in Georgia, XX, 58.
1900, XXX, 68.
injury by, in Porto Rico, XXII, 89.
striatalis, synonym of Proceras sacchariphagus, XVIII, 90.
in sugar cane, XVIII, 90.
Dibrachys boucheanus, parasite of Orgyia leucostigma, IX, 16.
Dictyophorus reticulatus, damage by, in Mississippi, XXX, 28.
Diglochis omnivora, parasite of brown-tail moth, XVII, 28.
Dinoderus substriatus, destructive to tan bark, XX, 107.
Diplosis pyrivora, damage by, in Maryland, IX, 82.
rosivora, destroying rosebuds, XXII, 44.
sorghicola, a new species on sorghum, XVIII, 81.
tritici, abundant in Ohio, XX, 69.
in Canada, XXVI, 96.
violicola, injuring violets, XXII, 48; XXVII, 47.
Disease, flies carrying, XXX, 39.
Disonycha caroliniana, living on purslane, XVIII, 83.
quinquevittata, swarming in Arizona, XVIII, 100.
migration of, XXX, 97.
triangularis, injuring beets in Ohio, VI, 68.
xanthomelæna, habits and life history of, XIX, 80.
in 1900, XXX, 69.
Dissosteira carolina, abundant in Montana in 1895, VII, 33.
damage by, in Mississippi, XXX, 29.
longipennis, abundant in Colorado in 1895, VII, 31.
Nebraska in 1896, VII, 36.
obliterata, abundant in Montana in 1895, VII, 33.
Distribution of insects, II, 91.
parasites, V, 17.
Docophorus acutipectus, host of, V, 223.
agelaii, description of, VI, 220.
atricolor, host of, V, 223.
bassanæ, host of, V, 217.
bisignatus, host of, V, 217.
bubonis, description and host of, V, 219.

Docophorus buteonis, hosts of, V, 218.
calvus, host of, V, 223.
ceblebrachys, hosts of, V, 216.
coccygi, description and host of, V, 222.
colymbinus, hosts of, V, 217.
communis, host of, V, 216.
compar, host of, V, 217.
corvi, description and host of, V, 220.
cursor, host of, V, 216.
cygni, hosts of, V, 217.
parasite of little red swan, V, 192.
fissiformis, host of, V, 217.
fuliginosus, host of, V, 223.
fusco-ventralis, description and host of, V, 221.
graviceps, host of, V, 223.
halieti, description and host of, V, 218.
ictorodes, hosts of, V, 217.
parasite of ducks and geese, V, 192.
insolitus, host of, V, 223.
kansensis, host of, V, 223.
lari, hosts of, V, 217.
melanocephalus, host of, V, 218.
minuto-trabeculatus, description and host of, V, 221.
montereyi, hosts of, V, 223.
occidentalis, host of, V, 223.
pertusus, hosts of, V, 217.
platystomus, hosts of, V, 216.
quadraticeps, host of, V, 223.
quiscali, description and host of, V, 219.
rostratus, host of, V, 218.
sialii, description and host of, V, 220.
speotyti, description and host of, V, 222.
sphenophorus, host of, V, 217.
superciliosus, host of, V, 216.
syrini, mention of, V, 219.
testudinarius, hosts of, V, 217.
Doryphora 10-lineata, abundant in Ohio in 1897, IX, 41.
Maryland, VI, 65; XX, 68; XXVI, 81.
common in Georgia, XX, 57.
on tobacco, IX, 41.
juncta, in Georgia, XX, 57.
Drasterius amabilis, enemy of Aramigus fuiieri, XXVII, 95.
elegans, preying on white grub, XIX, 79.
Drosophila amœna, injury to fruit, IV, 110.
ampelophila, liable to carry disease, XXX, 42.
damage to fruit, IV, 110.
Dryocœtes affaber, an enemy of tide-land spruce, XXI, 21.
granicollis, on chestnut, VII, 72.
Dysdercus ruficollis, staining cotton in Peru, XXII, 100.
Earias insulana, injury by, in Egypt, XXII, 99.
Echinophthirius setosus, parasite of the harbor seal, V, 188.
Echocerus cornutus, habits of, IV, 115.
Economic entomology, conditions of, in 1897, IX, 5.
evolution of, VI, 5.

Economic entomology, works on, XXIV, 83.
Ectobia germanica, habits of, IV, 92.
Elaphidion cinereum, lives in buttonwood, XVIII, 43.
imbelle, lives in oak, XVIII, 43.
inerme, habits of, XVIII, 41.
irroratum, in mangrove, XVIII, 43.
mucronatum, food habits of, XVIII, 42.
parallelum, abundance on maples, VI, 59.
subpubescens, habits of, XVIII, 41.
tectum, in stems of Yucca, XVIII, 43.
unicolor, lives in redbud, XVIII, 43.
villosum, habits of, XVIII, 35.
injuring apple twigs, VI, 58.
injurious in New York, XVII, 17.
on roses, XXVII, 101.
Elasmopalpus lignosellus, account of, XXIII, 17.
Elm leaf-miner, in New York, XVII, 21.
Emory fumigator, XX, 43.
Emphytus canadensis, injuring violets, XXVII, 26.
pallipes=E. canadensis, XXVII, 30.
Empoasca mali, injurious to potatoes, VI, 79.
viridescens, on potatoes, XVIII, 101.
Empusa aphidis, affecting Nectarophora destructor, XXVI, 58, 59, 70, 88.
infesting chinch bugs, XV, 39.
gryllii, destroying grasshoppers in Colorado in 1895, VII, 32, 38.
South Africa, IX, 35.
sphærosperma, destroying Phytonomus punctatus, IX, 89; XXVI, 81.
Empusina muscæ, destroying house flies, IV, 47.
Encyrtus flavus, hosts of, VII, 63.
johnsoni, parasite of Murgantia histrionica, XXVI, 21.
sp., parasite of Aspidiotus forbesi, VI, 75.
England, some injurious insects of, IX, 26.
Entedon epigonus, as enemy of Hessian fly, XVI, 38.
hagenowi, parasite of Evania appendigaster, IV, 95.
Entilia sinuata, habits of, XXX, 75.
Entomologic service in New York, XX, 39
Entomology, a list of works on North American, XXIV.
Entomophthora aphidis. *See* Empusa.
phytonomi, destroying Phytonomus punctatus, XXVI, 96.
sphærosperma. *See* Empusa.
Entomoscelis adonidis, in Canada, XXVI, 95.
Entomosporium maculatum, resembling the San Jose scale, III, 37.
Ephedrus incompletus, parasite of rose aphis, XVII, 46.
Ephestia cahiritella, life history of, VIII, 8.
infesting chocolate nuts, VIII, 7.
in various dry foods, VIII, 8.
calidella, feeds on dried figs, raisins, and currants, VIII, 10.
desuetella=E. ficulella.
elutella, injuring cayenne pepper, dried apples, and cacao beans, VIII, 9.
ficella=E. calidella.
ficulella, in cotton cake, currants, and dried figs, VIII, 10.
kuehniella, development of, VI, 85.
in Canada, XXVI, 96.
notes on, XX, 67.

Ephestia kuehniella, parasites of, VIII, 38.
protracted development of, VI, 88.
spread of, XXII, 97; XXVI, 82.
passulella=E. cahiritella.
semirufa=E. elutella.
sp., in nuts and fruits, IV, 129.
pressed figs, VIII, 10.
roxburghii=E. elutella.
xanthotricha=E. calidella.
Ephialtes irritator, parasite of Liopus variegatus, VII, 72.
Epicærus imbricatus, effect of cold winter on, XXII, 55.
life history of, XIX, 62.
notes on, XXIII, 31.
work of, in Maryland, XXVI, 82.
in 1900, XXX, 68.
Epicauta cinerea, damage by, in Maryland, VI, 65.
lemniscata, injuring potato vines, beet tips, squash plants, and alfalfa, VII, 85.
pennsylvanica, injuring China asters, VI, 72.
trichrus, on sweet potato, IX, 23.
vittata, damage by, in Ohio, XX, 70.
injury by, in Maryland, XXVI, 83.
Epilachna borealis, account of, XIX, 11.
bibliography of, XIX, 18.
effect of cold winter on, XXII, 58.
food plants of, XIX, 13.
Epilampra notabilis, injurious in South Australia, XXII, 95.
Epitrix brevis, on Solanum nigrum, XIX, 90.
cucumeris, destructive to young potatoes, IX, 81.
note on, XIX, 89.
fuscula, notes on, XIX, 87.
in 1900, XXX, 68.
parvula, effect of cold winter on, XXII, 55.
injuring tobacco, IX, 81.
life history of, XIX, 85.
in 1900, XXX, 68.
Ericerus pé-la, note of, IX, 39.
Eriocampoides limacina, damage by, in Colorado, XXVI, 78.
injurious in New York, XVII, 17.
Eriococcus azaleæ, on Rhododendron catawbiense in Ohio, XXVI, 90.
neglectus, on Atroplex canescens, XX, 7.
Euclea pænulata, feeding on apple, XXX, 98.
Euclemensia bassettella, parasite of oak Kermes, VI, 60.
Eudemis botrana, injuring roses, XXVII, 88.
notes on, XX, 71.
Euderces picipes, on chestnut, VII, 72.
Eugonia subsignaria, unusually destructive in Iowa, VI, 80.
Euhæmatopinus abnormis, parasite of the mole, V, 187.
Eulophus cyriades, parasite of Penthina nimbatana, XXVII, 86.
Eunotus lividus, parasite on plum scale, II, 90.
of Pulvinaria innumerabilis, XXII, 15.
Eupelmus allynii, parasite of Hessian fly, XVI, 34.
xiphidii, parasite of Orchelimum agile, XXX, 31.
Eupeodes volucris, feeding on plum lice, IX, 78.

Euphoria inda, habits and grubs of, VI, 58.
life history of, XIX, 67.
pest to peach crop, VI, 62.
note on, XXX, 85.
Euphorocera claripennis, parasite of Euproctis chrysorrhea, XVII, 28.
Cœlodasys unicornis, IX, 43.
Epilachna borealis, XIX, 16.
Orgyia leucostigma, IX, 16.
Melanoplus differentialis, XXX, 25.
Euplectrus comstockii, parasite of Laphygma frugiperda, XXIX, 36.
frontalis, parasite of Noctua c-nigrum, XXVII, 114.
plathypenæ, parasite of Plathypena scabra, XXX, 50.
Eupogonius vestitus, on chestnut, VII, 72.
Euproctis chrysorrhœa, account of, in Massachusetts, XVII, 24.
birds that feed upon larvæ of, XX, 88.
in Massachusetts, XXVI, 75.
Eupsalis minuta, destructive to stave timber, XVII, 47.
Euptoieta claudia, on pansies, XXVII, 80.
Eurymetopus brevis, mention of, V, 233.
Eurytoma funebris=Bruchophagus.
Euschistus variolarius, note on, XXX, 84.
Euthyrhynchus floridanus, preying on Nezara hilaris, XXII, 109.
Eutrixa masuria, parasite of white grub, XIX, 79.
Evania appendigaster, parasite of cockroach eggs, IV, 95.
Exartema permundana, effect of cold winter on, XXII, 57.
on blackberry in Ohio, XX, 71.
Exoascus cecidomophilus, associated with cecidomyiid on chokecherry, VI, 58.
Exochus mansuetor, parasite of Pyralis farinalis, VIII, 42.
Exorista blanda, parasite of Plathypena scabra, XXX, 50.
griseomicans, parasite of Orgyia leucostigma, IX, 16.
hypenæ, parasite of Hypena humuli, VII, 46.
pyste, parasite of Hellula undalis, XXIII, 60.
sp., parasite of Orgyia leucostigma, IX, 17.
Falciger rostratus, parasite of pigeon, V, 262.
Farm practice against insects, II, 17.
Feltia herilis, abundance of larvæ in Ohio, II, 85.
Fidia viticida, condition of, in Ohio, in 1897, IX, 44.
serious damage by, in Ohio, XX, 70.
work of, in Ohio, VI, 69.
damage by, in Illinois, XXX, 97.
Fiorinia fioriniæ, in Georgia, XXVI, 52.
Fish, use of, to clear ponds of mosquito larvæ, IV, 20; V, 29.
Fish-oil soaps, experiments with, against San Jose scale, III, 68.
use of, II, 23.
value as insecticides, VI, 38; XVII, 96.
Flea-beetles, remedies for, XIX, 90.
in California vineyards, XXX, 91.
Fleas, general characters of, V, 141.
remedies against, IV, 29.
to rid cats of, XXX, 94.
Flies, carriers of disease, V, 20; XXX, 39.
Flour beetles, general characters of, IV, 112.
Food insects, remedies for, IV, 129.
Forests, insect enemies of, II, 75; XXI, 7.

Forest insects, remedies against, VII, 74.
Formaldehyde gas, as an insecticide, IX, 62; XXX, 39.
Foul brood, disease of bees, I, 112.
laws against, XIII, 54.
Frontina aletiæ, parasite of Orgyia leucostigma, IX, 16.
frenchii, parasite of Orgyia leucostigma, IX, 16.
Laphygma frugiperda, XXIX, 36.
Fruit flies or vinegar flies, IV, 109.
remedies for, IV, 111.
Fungous enemies of chinch bug, XV, 41.
Gadflies, a remedy for, XX, 24.
Galerucella cavicollis, habits and history of, XIX, 90.
injurious in New York, XVII, 20.
on peach in Pennsylvania, XVII, 23.
luteola, abundance in Maryland, VI, 66; XX, 65.
early spraying of, II, 58.
in Albany, N. Y., II, 50.
Springfield, Mass., II, 40.
Washington, D. C., II, 47.
injurious in New York, XVII, 17; XX, 61.
number of eggs laid by, XVII, 17.
preference for English elms, II, 53.
recommendations against, II, 55.
second brood of, in Albany, N. Y., II, 51.
spraying against, II, 41.
trunk and crown washing against, VI, 36.
Galleria mellinella, the wax moth, I, 113.
Gargaphia angulata, feeding on beans, XXIII, 32.
Gastrophilus equi, damage by, V, 77.
in Delaware, XXVI, 67.
life history and habits, V, 78.
prevention of injuries, V, 82.
remedies for the bots, V, 84.
hæmorrhoidalis, amount of injury by, V, 84.
life history and habits of, V, 85.
remedies for, V, 85.
nasalis, habits of, V, 86.
in Delaware, XXVI, 67.
pecorum, notice of, V, 87.
Gelechia piscipellis, a leaf-miner in tobacco, VII, 76.
in Porto Rico, XXII, 89.
solanella. *See* G. piscipellis.
Geometrid larva, defoliating forest trees, XXI, 18.
Georgia laws against injurious insects, XIII, 13.
some insects of, XX, 56.
Giant Cactus, fauna of, IX, 38.
Giebelia mirabilis, host of, V, 236.
Gipsy moth—Porthetria.
Glossina morsitans, habits of, V, 133.
Glypta erratica, parasite of Polygonia comma, VII, 51.
Gnathotrichus asperulus, mention of, VII, 30.
materiarius, habits of, VII, 30.
retusus, mention of, VII, 30.
Gonia capitata, parasite of Peridroma saucia, XXIX, 62.

Goniocotes abdominalis, mention of, V, 230.
parasite of chickens, V, 193.
burnettii, parasite of chickens, V, 194.
chrysocephalus, parasite of the pheasant, V, 194.
compar, host of, V, 230.
parasite of the pigeon, V, 193.
gigas=abdominalis.
hologaster, mention of, V, 230.
parasite of chicken, V, 192.
rectangulatus, mention of, V, 230.
parasite of the peacock, V, 194.
Goniodes colchius, parasite of the pheasant, V, 197.
cupides, host of, V, 231.
damicornis, host of, V, 231.
parasite of the pigeon, V, 195.
dispar, host of, V, 230.
dissimilis, parasite of chickens, V, 195.
falcicornis, host of, V, 231.
parasite of the peacock, V, 197.
mephitidis, host of, V, 231.
merriamanus, mention of, V, 231.
minor, parasite of the pigeon, V, 196.
ortygis, host of, V, 231.
numidianus, parasite of Guinea fowls, V, 195.
stylifer, host of, V, 231.
parasite of the turkey, V, 196.
Goniops hippoboscoides, notice of, V, 71.
Gossyparia ulmi, in Massachusetts, XVII, 62.
Michigan, XVII, 66.
New Jersey, VI, 62.
New York, VI, 60.
Grain beetles, general characters of, IV, 120.
Graphisurus pusillus, in pine, VII, 74.
Grapholitha prunivora, effect of cold winter on, XXII, 57.
Graphops marcassitus, on strawberries, IX, 82.
Grasshoppers, disease of, in Colorado, VI, 89.
insects reared from dead, VII, 92.
investigation of 1895, VII, 31.
investigations in 1896, VII, 36.
nocturnal flight of, XXII, 106.
in Mississippi, XXX, 7.
the Philippines, XXX, 83.
use of bran-arsenic mash against, XXX, 96.
Greenhouse insects, killed by hydrocyanic-acid gas, XXII, 69.
Gryllotalpa hexadactyla, in Porto Rico, XXII, 90.
Gryllus abbreviatus, eating tomato plants, XVII, 100.
assimilis, in houses, IV, 53.
domesticus, in houses in America, IV, 53.
Gymnetron teter, on plum trees, XVII, 99; XX, 72.
Gypsy moth=Porthetria dispar.
committee, work of, XVII, 78.
Gyrodus gracilis, host of, V, 249.
parasite of the Guinea pig, V, 215.
ovalis, host of, V, 249.

Gyropus ovalis, parasite of Guinea pig, V, 216.
Habrobracon hebetor=Bracon.
Habrocytus rhodobæni, parasite of Rhodobænus 13-punctatus, XXII, 104.
Habrolepis dalmanni, introduced into this country, XVII, 14.
Hadena devastatrix, abundant in Ohio, XX, 72.
Hadrobracon hebetor. *See* Bracon.
Hadronotus anasæ, parasite of Anasa tristis, XIX, 26.
Harpalus erraticus, biting man, XXX, 90.
Hæmatobia serrata, amount of injury by, V, 116.
early and new appearances of, VII, 86.
habits and life history, V, 116.
rapid spread of, V, 115.
remedial measures, V, 120.
Hæmatomyzus elephantis=proboscideus.
proboscideus, parasite of the elephant, V, 188.
Hæmatopinoides squamosus, parasite of pocket gopher, V, 187.
Hæmatopinus acanthopus, parasite of the field mouse, V, 181.
antennatus, parasite of the fox squirrel, V, 183.
asini, parasite of horse, V, 180.
bicolor=piliferus.
brevicornis, parasite of the giraffe, V, 170.
cameli, parasite of camel, V, 170.
cervicapræ=tibialis.
crassicornis, parasite of deer, V, 170.
erraticus, parasite of Larus?, V, 186.
eurysternus, life history of, V, 174.
parasite of ox, V, 172.
remedies for, V, 175.
hesperomydis, parasite of white-footed mouse, V, 184.
læviusculus, mention of, V, 186.
montanus, parasite of the gray squirrel, V, 184.
obtusus, parasite of a monkey, V, 169.
pedalis, parasite of sheep, V, 170.
piliferus, infesting dogs, V, 169.
punctatus=tuberculatus.
sciuropteri, parasite of flying squirrel, V, 182.
spinulosus, parasite of the rat, V, 181.
stenopsis, parasite of goat, V, 170.
suturalis, parasite of ground squirrels, V, 185.
tibialis, parasite of antelope, 170.
tuberculatus, parasite of buffalo, V, 177.
urius, life history and remedies, V, 179.
parasite of the hog, V, 178.
ventricosus, parasite of the rabbit, V, 182.
vituli, life history and remedies, V, 177.
parasite of ox, V, 176.
Hæmatopota pluvialis, habits of, V, 69.
Hairy caterpillars, destroyed by birds, XX, 85.
Haltica chalybea, very abundant in Maryland, XX, 65.
ignita, account of, XXIII, 70.
punctipennis, injuries by, in northern Colorado, IX, 78.
Halticus bractatus, feeding on red clover, VI, 68.
uhleri, damage by and food habits, XIX, 57.
Harpalus caliginosus, injuring strawberries in Ohio, XXVI, 89.

Harpalus caliginosus, noise of, XXII, 103.
pennsylvanicus, notes on, XXII, 100.
ruficornis, damaging strawberries in England, IX, 26.
Harvest mites, habits of, V, 251.
remedies for, V, 252.
Helicobia helicis, bred from dead grasshoppers, VI, 92.
parasite of Orgyia leucostigma, IX, 17.
Melanoplus differentialis, XXX, 25.
Heliothis armiger, damage by, in Maryland, XVII, 94.
to strawberry plants, VII, 84.
destructive in Georgia, XX, 58.
effect of cold winter on, XXII, 56.
injuring peaches in Ohio, IX, 41.
in 1900, XXX, 67.
rhexiæ, on roses, XXVII, 101.
Hellebore, against potato beetles on tomato, IX, 46.
Hellula undalis, effect of cold winter on, XXII, 56.
habits and life history, XIX, 51.
notes on, XXII, 53.
Hemiteles tineæ, parasite of Tinea granella, VIII, 43.
Henous confertus, food plants of, XXII, 108.
Heterachthes æneolus, boring in grapevines in Mexico, XVIII, 93.
Heteropus ventricosus=Pediculoides.
Hippelates flies, cause of sore eyes, VII, 86.
flavipes, plebejus, and pusio, plague to animals, V, 134.
Hippobosca bubonis=Olfersia americana.
equina, attacking horses, V, 137.
Hippodamia convergens, attacking plum lice, IX, 78.
feeding on Nectarophora destructor, XX, 98; XXVI 71.
glacialis, feeding on Nectarophora destructor, XXVI 71.
Hives, characters and parts of, I, 40.
Homalodisca coagulata, note on, XXX, 95.
Homalomyia brevis, liable to carry disease, XXX, 42.
canicularis, found in houses, IV, 44.
Homalotylus sp., ladybird parasite in California, VI, 48.
Honey and pollen plants, list of, I, 65.
extracting, I, 75.
extractors, I, 49.
plants, cultivation of, I, 59.
production of, I, 22.
Hop merchants, what they are, VII, 47.
plant, insects affecting, VII, 40.
Hoplia callipyge, injurious to roses, XXVII, 96.
trifasciata, injurious to cherry trees in Ohio, XVII, 98.
Hoplismenus morulus, parasite of Polygonia interrogationis, VII, 49.
Horseflies, habits of, V, 58.
House ants, species of, IV, 96.
flies, species of, IV, 43.
and mosquitoes, XVII, 55.
Household insects, effects of temperature on, VI, 13.
Hyalomma ægyptius and africanum, mention of, V, 262.
note on XXVI, 44.
Hyalopterus pruni, injuring plums and prunes in Colorado, IX, 78.
Hydnocera verticalis, from willow, XVII, 99.

Hydrocyanic-acid gas, against San Jose scale, III, 59; XII, 16; XVII, 39.
for low-growing plants, XXVI, 60.
in greenhouses, XXII, 69; XXVII, 20.
orchards, a new method of handling, XX, 43.
value and use of, IX, 61; XXVI, 34.
Hydrœcia immanis, life history of, VII, 40.
remedies for, VII, 43.
margidens, boring in stems of Cosmos plants, IX, 83.
Hylastinus obscurus, work of, in Canada, XXVI, 96.
Hylesinus aspericollis, destructive to white alder, XXI, 16.
Hylotrupes ligneus, injuring rustic cedar fences, XXX, 91.
Hylurgops rugipennis, an enemy of tide-land spruce, XXI, 21.
Hylurgus piniperda, injuring pine in Norway, IX, 80.
Hypena humuli, life history of, VII, 44.
Hyperacmus tineæ, parasite of Tinea pellionella, IV, 66.
Hyperaspis signata, beneficial work of, XXVI, 17.
feeding on Pulvinaria acericola, XXII, 23.
innumerabilis, XXII, 12.
Hyperchiria io, abundance of, in Louisiana, XVIII, 99.
Hypoderas columbæ = Falciger rostratus.
Hypoderma bovis, structure and characters, V, 95.
lineata, life history, V, 98.
possible case of myiasis by, XVIII, 97.
structure and characters, V, 97.
Hyponomeuta padi, injuring Prunus in Norway, IX, 80,
variabilis, injuring Sorbus in Norway, IX, 80.
Hypostena barbata, a parasite of Disonycha xanthomelæna, XIX, 85.
floridensis, parasite of Loxostege obliteralis, XXVII, 107.
Icerya purchasi, in Portugal, XVII, 30.
not in the Azores, VII, 87.
Ichneumon capitus, parasite of Peridroma saucia, XXIX, 62.
comes, parasite of Noctua c-nigrum, XXVII, 59.
maurus, parasite of Peridroma saucia, XXIX, 62.
Ichthyura apicalis, on poplar in Ohio, XVII, 99.
Idaho, laws against injurious insects, XIII, 15.
Importation of destructive insects, II, 79.
Inoculation against insects, II, 16.
Insect control, in Riverside, Cal., XXII, 83.
Insectary and office methods, XX, 41.
Insecticide experiments, some, VI, 30; IX, 60; XXX, 33.
Insecticides, spring applications of, on fruit trees, XXVI, 22.
Insectivorous birds, VII, 84; XXX, 93.
attacking the chinch bug, XV, 53.
feeding on brown-tail moth, XVII, 28.
that attack the Cicada, XIV, 105.
habits of lizards, XXII, 96.
Insects and the weather, XXII, 51; XXX, 63.
common names of, IX, 32.
fertilizing muskmelons, XVII, 75.
from British Honduras, XXX, 82.
the Philippines, XXX, 83.
Kansas, XXX, 84.
injuring binding twine, XXX, 94.
injurious in South Africa, IX, 34.

Insects near smelting works, XXX, 97.
of Porto Rico, XXIII, 88.
scarcity of, in New York in 1896, VI, 54.
Inspection, in Riverside, Cal., XXII, 83.
Ischnaspis longirostris, in Georgia, XXVI, 52.
Isocratus vulgaris, parasite of Nectarophora destructor, XXIII, 36.
Ithycerus noveboracensis, eating buds of apple and peach, XX, 58.
in Virginia, XXII, 107.
Ixodes pilosus, note on, XXVI, 47.
reduvius, erinaceus, and margicanum, mention of, V, 262.
ricinus, parasite of ground squirrels, V, 262.
Kainit, experiments with, against Fidia viticida, IX, 45.
used against wireworms, XVII, 101.
Kansas, insects from, XXX, 84.
Kentucky laws against injurious insects, XIII, 18.
Kermes galliformis, occurrence in New York, VI, 60.
trinotatus, in Georgia, XXVI, 53.
Kerosene against mosquitoes, IV, 18; V, 29; XVII, 56; XXV, 51.
and milk emulsion, against San Jose scale, III, 59.
soap emulsion, against San Jose scale, III, 58.
water, mixture of, XII, 23.
proportions for use, II, 27.
pump, II, 19.
whale-oil soap emulsion, experiments with, II, 21.
for San Jose scale, VI, 42.
use of, XVII, 50.
pure, VI, 71; IX, 57; XII, 17; XVII, 95.
emulsion, against San Jose scale, III, 58, 69.
device for preparation of, VI, 93.
use of, in California, IX, 59.
ineffective against white grubs, XXX, 92.
lime emulsion, experiment with, XXX, 37.
oil, experiment with, against San Jose scale, III, 69.
sprayer, modification of the knapsack, II, 19, 26, 28, 30.
Kissing-bug, account of, XXII, 24.
Lachnosterna arcuata, XXVII, 75.
structure and habits of larva, XIX, 74.
farcta, injurious to collards, XXII, 107.
fusca, ineffectiveness of kerosene emulsion against, XXX, 92.
Ladybirds, introduced from Australia into India, XVIII, 89.
Læmobothrium atrum, host of, V, 247.
giganteum, host of, V, 247.
hastipes, mention of, V, 247.
similis, host of, V, 248.
Læmophlœus pusillus, in cereals, IV, 129.
Laisser-faire philosophy applied to the insect problem, XX, 5.
Laminosioptes cysticola, parasite of fowls, V, 263.
Lantern trap, a successful one, IX, 75.
Laphygma flavimaculata, in Colorado, XXVI, 79.
frugiperda, account of, XXIX, 13.
damage by, in Ohio, XXVI, 85.
effect of cold winter on, XXII, 58.
in Mississippi, XXX, 31.
1899, XXII, 78.

Laphygma frugiperda, in 1900, XXX, 67.
injury to violets, XXVII, 73.
means against, XXIX, 37.
Lasioderma serricorne, fumigation against, XXX, 78.
food habits of, IV, 126.
Lathromeris cicadæ, parasitic on Cicada eggs, XIV, 97.
Larvæ in ear, probably Calliphora or Sarcophaga, VII, 86.
Laverna gleditschiella, in Ohio, XX, 73.
Lecaniodiaspis sp., on wild honeysuckle, XXVI, 84.
tessellatus, in Georgia, XXVI, 53.
Lecanium armeniacum, found in New York, XVII, 22.
in Georgia, XXVI, 53.
cerasifex, injurious to maple in New York, XVII, 22.
fletcheri, parasites of, VII, 62.
hemisphæricum, in Georgia, XXVI, 53.
on coffee in Porto Rico, XXII, 89.
hesperidum, in Georgia, XXVI, 53.
longulum, in Georgia, XXVI, 53.
nigrofasciatum, description of, XVIII, 26.
in Georgia, XXVI, 53.
Maryland, XVII, 66.
injurious to plum and peach in Maryland, XX, 66.
oleæ, notes on, in California, XXVI, 91.
persicæ, injuring peach, VI, 77.
tessellatum, in Georgia, XXVI, 53.
tulipiferæ, in Georgia, XXVI, 53.
Legislation against brown-tail moth, XVII, 30.
insects, II, 12; VI, 12, 50, 63; XIII.
San Jose scale, III, 72.
Lepidocyrtus americanus, occurrence in houses, IV, 83
Lepidoptera, at light and at sugar, IX, 30.
Lepisma domestica, liking for hot places, IV, 78.
saccharina, damage to books and papers, IV, 76.
Leptocoris trivittatus, abundance of, in Iowa, XXX, 98.
Leptoglossus oppositus, effect of cold winter on, XXII, 56.
habits and life history, XIX, 44.
on Russian apricot trees, VII, 87.
in 1900, XXX, 66.
phyllopus, habits and life history, XIX, 46.
Leptostylus collaris, on chestnut, VII, 72.
commixtus, on pine, VII, 74.
macula, on chestnut, VII, 72.
Leptoterna dolobrata, feeding on timothy, IX, 42.
Leptura zebra, on chestnut, VII, 71.
Leptus. *See* Harvest mites.
Leucania albilinea, appearance in New York, VI, 56.
unipuncta, abundance in New York in 1896, VI, 55.
damage by, in Iowa, VI, 78.
Massachusetts, VI, 62.
New Jersey, VI, 62.
late outbreak of, XVIII, 99.
means against, VI, 62.
outbreak of, in Ohio, VI, 66.
Leucopis nigricornis, parasite of Pulvinaria acericola, XXII, 23.

Leucoptera coffeella, in Porto Rico, XXII, 89.
Life zones about District of Columbia, XXII, 52.
Ligyrus gibbosus, injuring corn and carrots, XVIII, 93.
rugiceps, injuring corn and rice, XVIII, 92.
Limax campestris, preying on the common mealy bug, IX, 42.
Lime, salt, and sulphur wash, value of, IX, 60.
sulphur, and salt wash, in the East, III, 70; XXX, 34.
with Paris green, value of, VI, 43.
Limneria dubitata, parasite of Laphygma frugiperda, XXIX, 36.
ephestiæ, parasite of Plodia interpunctella, VIII, 41.
fugitiva, host for Pimpla conquisitor, XXVI, 34.
parasite of Ephestia kuehniella, XXVI, 96.
valida, parasite of Orgyia leucostigma, IX, 16.
Lina scripta, injuring basket willow, II, 69.
means against, II, 73.
Linguatula rhinaria, parasite in nose of various animals, V, 275.
Liopus variegatus, on chestnut, VII, 72.
Lipeurus anseris, parasite of geese, V, 200.
baculus, parasite of the pigeon, V, 199.
host of, V, 232.
bifasciatus, host of, V, 233.
botauri, description and host of, V, 234.
celer, hosts of, V, 235.
constrictus, hosts of, V, 236
densus, host of, V, 235.
diversus, host of, V, 236.
forficulatus, hosts of, V, 233.
heterographus, host of, V, 231.
parasite of the chicken and pheasant, V, 197.
infuscatus, description and hosts of, V, 234.
jejunus, host of, V, 234.
parasite of geese, V, 200.
lecteus=tadornæ.
leucopygus, host of, V, 234.
limitatus, host of, V, 236.
longicornis, host of, V, 233.
longipilus, host of, V, 236.
luridus, description and host of, V, 232.
numidæ, parasite of the Guinea fowl, V, 198.
picturatus, host of, V, 236.
polytrapezius, host of, V, 234.
parasite of the turkey, V, 201.
pullatus, hosts of, V, 234.
pustulatus, host of, V, 234.
squalidus, parasite of ducks, V, 200.
hosts of, V, 233.
subangusticeps, description and host of, V, 235.
tadornæ, parasite of the sheldrake, V, 198.
temporalis, host of, V, 233.
testaceus, host of, V, 233.
toxoceros, host of, V, 233.
variabilis, host of, V, 234.
parasite of chickens, V, 202.
varius, hosts of, V, 235.

Lipoptena cervi, notes on, IX, 26.
depressa, from deer (Cervus virginianus), V, 137.
Lixus concavus, account of, XXIII, 61.
effect of cold winter on, XXII, 57.
mucidus, notes on, XXIII, 61.
on corn in Ohio, XVII, 100.
Lizards, insectivorous habits of, XXII, 96.
Locusts at Lourenço Marquez, XXII, 105.
in Argentina, XXII, 105.
London purple, experiments with, VI, 33.
Lophoderus quadrifasciana, in Delaware, XXVI, 68.
destructive in Canada, XXVI, 94.
triferana, on roses, XXVII, 88.
violets, XXVII, 81.
Lophyrus rufus, injuring pine in Norway, IX, 80.
Louisiana laws against injurious insects, XIII, 20.
Loxostege frustalis, ravages of, in South Africa, IX, 35.
obliteralis, account of, XXVII, 102.
similalis, effect of cold winter on, XXII, 55.
in 1900, XXX, 66.
Lozotænia clemensiana, abundant in clover in Ohio, XVII, 99.
effect of cold winter on, XXII, 57.
Lucilia cæsar, found in houses, IV, 44.
habits of, V, 123.
parasite of Melanoplus differentialis, XXX, 25.
Lygocerus triticum, parasite of Hessian fly, XVI, 36.
Lygus invitus, injury by, XXX, 98.
pratensis, attacking buds of China asters, IX, 42.
injuring peach in Ohio, XX, 72.
injurious to pear and plum, XX, 63.
Lymexylon sericeum, taken from living chestnut in West Virginia, XVII, 46.
Lysiphlebus cucurbitaphidis, parasite of Myzus sp., XXVI, 68.
myzi, parasite of Aphis mali, XXVI, 68.
Macrobasis unicolor, feeding on locust hedge, VI, 59.
injuring grasshopper eggs, XXX, 23.
note on, XXX, 84
Macrodactylus angustatus, habits of, IX, 23.
subspinosus, abundant in Delaware, XXVI, 67.
in Maryland, XVII, 94.
not common in Maryland, XXVI, 83.
remedy for, XX, 70.
Magdalis ænescens, account of, XXII, 37.
olyra, on plum trees, XXII, 99.
Mallophaga, list of species in United States, V, 216.
Mamestra picta, abundance of larvæ in New York, XVII, 21.
effect of cold winter on, XXII, 57.
Margaronia hyalinata, effect of cold winter on, XXII, 55.
habits of, XIX, 42.
not common in Georgia, XX, 59.
in 1900, XXX, 66.
nitidalis, damage by, in Georgia, XX, 58.
effect of cold winter on, XXII, 55.
habits of, XIX, 41.
in 1900, XXX, 66.

Maryland, insects of, XX, 62.
laws against injurious insects, XIII, 20.
Massospora cicadina, disease of Cicada, XIV, 106.
May flies, swarm of, on Lake Erie, XXII, 108.
Meal worms, general characters of, IV, 115.
Megachile sp., larval cells in a bed, VII, 84.
Megastizus speciosus, as a nuisance, XVIII, 92.
an enemy to Cicada, XIV, 98.
Megilla maculata, feeding on Nectarophora destructor, XX, 98; XXVI, 71.
Megistopoda pilatei, notice of, V, 140.
Melanolestes abdominalis, habits of, XXII, 25.
picipes, habits of, XXII, 24.
Melanophila consputa, near smelting works, XXX, 97.
drummondi, an enemy of hemlock, red fir, and noble fir, XXI, 17.
longipes, near smelting works, XXX, 97.
Melanophora roralis, parasite of Pyralis farinalis, VIII, 42.
Melanoplus atlanis, abundant in Colorado in 1895, VII, 31.
Nebraska in 1896, VII, 37.
in Manitoba, XXVI, 95.
damage by, in Mississippi, XXX, 29.
bivittatus, abundant in Colorado in 1895, VII, 31.
Nebraska in 1896, VII, 37.
bacterial disease of, VI, 89.
damage by, in Ohio, VI, 66.
injury in Ohio, XX, 70.
differentialis, abundant in Nebraska in 1896, VII, 37.
account of, in Mississippi, XXX, 1.
life history of, XXX, 1.
means against, XXX, 14.
natural enemies of, XXX, 22.
femur-rubrum, abundant in Nebraska in 1896, VII, 37.
disease of, VI, 93.
fœdus, abundant in Colorado in 1895, VII, 31.
lakinus, abundant in Nebraska in 1896, VII, 37.
packardi, abundant in Colorado in 1895, VII, 31.
spretus, abundant in Nebraska in 1896, VII, 36.
in Manitoba, XXVI, 95.
the Turtle Mountains, XXII, 30.
rare in Colorado in 1895, VII, 31.
Meligethes ænus, injuring cabbage in Norway, IX, 79.
Melitæa editha, on violets, XXVII, 79.
Melittia satyriniformis, dates regarding, in Georgia, XX, 59.
effect of cold winter on, XXII, 55.
life history of, XIX, 34.
in 1900, XXX, 68.
Meloë angusticollis, feeding on Impatiens, XVIII, 100.
impressus, injury by, XXX, 98.
Meloidæ, eaten by papabotte, XXX, 93.
Melophagus ovinus, attacking sheep, V, 138.
remedies for, V, 139.
Menopon biseriatum, host of, V, 243.
parasite on chickens, pheasants, etc., V, 212.
carduelis, host of, V, 244.
consanguineum, host of, V, 243.

Menopon crassipes, host of, V, 244.
expansum, description and host of, V, 245.
fulvo-fasciatum, host of, V, 244.
fulvo-maculatum, parasite of the pheasant, V, 212.
fusco-marginatus, description and host of, V, 245.
giganteum, parasite of the dove, V, 210.
indistinctum, host of, V, 244.
infrequens, host of, V, 244.
interruptus, description and host of, V, 245.
loomisii, host of, V, 244.
navigans, host of, V, 244.
numidæ, parasite of the Guinea fowl, V, 213.
pallescens, hosts of, V, 243.
pallidum, host of, V, 243.
parasite of chickens, V, 210.
phæstomum, parasite of the peacock, V, 212.
rusticum, host of, V, 243.
titan, host of, V, 243.
tridens, host of, V, 244.
Meraporus calandræ, parasite of Sitodrepa panicea, IV, 125.
Merisus destructor, parasite of Hessian fly, XVI, 31.
Mesograpta polita, injurious to corn in Virginia, VII, 86.
Mesostenus gracilis, parasite of Ephestia kuehniella, XX, 67.
Meteorus indagator, parasite of Peridroma saucia, XXIX, 62.
vulgaris, parasite of Hellula undalis, XXIII, 60.
Peridroma saucia, XXIX, 62.
Michigan laws against injurious insects, XIII, 22.
Microdus gibbosus, parasite of Mineola indiginella, XXVI, 68.
Microgaster militaris, appearance of, in Iowa, VI, 78.
Microphthalma disjuncta, parasite of white grub, XXX, 79.
Micropteryx pomivorella, numerous in Canada, XXVI, 94.
Milyas cinctus, enemy of chinch bug, XV, 54.
Mineola indiginella, in Delaware, XXVI, 68.
Monarthrum dentiger, mention of, VII, 28.
fasciatum, habits of, VII, 26.
in maple in Ohio, XXVI, 90.
injuring wine casks, VII, 85.
on peach in Ohio, II, 91.
mali, boring in wine casks, VII, 85.
habits of, VII, 26.
scutellare, mention of, VII, 28.
Monilia candida. *See* Xyleborus dispar.
Monocrepidius bella, injuring millet, XVII, 85.
vespertinus, injuring cotton in the South, XX, 57.
Monohammus scutellatus and M. confusor, habits of, VI, 49.
Monomorium minutum, as a house ant, IV, 97.
transporting larvæ of San Jose scale, III, 50.
pharaonis, means against, IV, 96.
Monophadnus rubi, effect of cold winter on, XXII, 57.
in 1900, XXX, 69.
Monoptilota nubilella, account of, XXIII, 9.
Monoxia puncticollis, injuring sugar beets in New Mexico, XVIII, 96.
Mordella scutellaris, reared from stem of Amaranthus chlosostachya, XXII, 103.
Morellia micans, liable to carry disease, XXX, 44.

Mosquitoes and house flies, XVII, 55.
and malaria, XXV, 17.
habits of, XXV.
list of, in United States, IV, 22; XXV, 20.
of the United States, XXV.
remedies against, IV, 17; V, 28; XXV, 49.
synopsis of the North American, XXV, 18.
Murgantia histrionica, abundant in Georgia, XX, 59.
Maryland in 1897, VI, 65; IX, 81; XVII, 94.
West Virginia, VI, 72.
effect of cold winter on, XXII, 55.
home and original food plant of, XXII, 108.
in Ohio, II, 90.
increase of, in Ohio, VI, 67.
injuring asparagus, VII, 80.
rare in Delaware, XXVI, 66.
Maryland, XX, 67; XXVI, 82.
Ohio, XX, 71.
in 1900, XXX, 67.
Musca domestica, life history of, IV, 45.
remedies for, IV, 47.
disease carried by, XXX, 41.
Muskmelons, fertilization of, XVII, 75.
Myelois ceratoniæ, feeding on St. John's bread, VIII, 10.
Myiasis, case of, XVIII, 97.
Myobia musculi, mention of, V, 263.
Myochrous denticollis, outbreak of, in Ohio, XXVI, 87.
Myocoptes musculinus, mention of, V, 263.
Myodocha serripes, injuring strawberries in Ohio, XXVI, 88.
injury to strawberries, XXII, 108.
sucking strawberries, XX, 63.
Mytilaspis citricola, damaging orange trees in the Azores, VII, 87.
in Georgia, XXVI, 51.
gloveri, in Georgia, XXVI, 51.
pomorum, common in West Virginia, VI, 72.
in Georgia, XXVI, 51.
not affected by kerosene, IX, 41.
notes on, VI, 77.
very destructive to lilac, XX, 66.
Myzocallis sp., abundant on timothy in Ohio, VI, 69.
Myzus cerasi, abundant in Maryland in 1897, IX, 81.
mahaleb, life history of, VII, 52.
on violets, XXVII, 79.
Necrobia rufipes, injury to hams, IV, 105.
remedies for, IV, 106.
Nectar, use of, I, 22.
Nectarophora destructor, account of, XX, 94; XXIII, 33.
effect of cold winter on, XXII, 58.
infected with Empusa aphidis, XXVI, 58, 59.
in Maryland, XX, 62; XXVI, 81.
Ohio, XXVI, 88.
1900, XXX, 68.
notes on, XXVI, 55.
in Delaware, XXVI, 69.

Nematus ribesii. *See* Pteronus.
Nemoræa leucaniæ, parasite of army worm in New York, VI, 56.
Neocerata rhodophaga, destructive to rosebuds, XXII, 44.
Neoclytus erythrocephalus, bred from seasoned hickory, XVII, 46.
on chestnut, VII, 72.
Neophasia menapia, defoliating yellow pine, XXI, 17.
outbreak of, VII, 77.
New York, insects of, XX, 60.
Nirmus abruptus, description and host of, V, 229.
boophilus, host of, V, 230.
brachythorax, host of, V, 223.
candidus, host of, V, 224.
citrinus, hosts of, V, 224.
cordatus, description and host of, V, 228.
cyclothorax, hosts of, V, 224.
discocephalus, host of, V, 223.
euzonius, host of, V, 223.
farallonii, host of, V, 230.
fenestratus, host of, V, 224.
furvus, description and host of, V, 225.
fuscus, hosts of, V, 223.
giganticola, host of, V, 230.
gracilis, description and host of, V, 225.
hebes, host of, V, 230.
lineolatus, host of, V, 224.
marginatus, description and host of, V, 228.
orarius, host of, V, 230.
ornatissimus, V, 224.
var. xanthocephali, description and host of, V, 224.
orpheus, description and host of, V, 227.
pallidus, description and host of, V, 227.
parallelus, description and host of, V, 229.
picturatus, description and host of, V, 226.
pileus, host of, V, 224.
præstans, host of, V, 230.
rotundatus, description and host of, V, 226.
secondarius, description and host of, V, 227.
signatus, host of, V, 224.
submarginellus, host of, V, 223.
tyrannus, description and host of, V, 228.
Nitzschia pulicaris, host of, V, 247.
Noctua c-nigrum, in greenhouses, XXVII, 54.
outbreak of, in Ohio, XXVI, 85.
Noda cretifera, injuring coffee trees in Guatemala, XVIII, 100.
Nodonota clypealis, food plant of, VII, 61.
on leaves of Actinomeris squarrosa, XIX, 95.
convexa, food plant of, VII, 61.
puncticollis, life history and damage to roses, VII, 60.
tristis, food plants of, VII, 61.
note on, XIX, 95.
Nolophana malana, feeding on apples in New York, VI, 57.
Nomius pygmæus, appearance in numbers in a house, VII, 85.
notes on its odor, IX, 49.
North American entomology, a list of works on, XXIV.

North Carolina laws against injurious insects, XIII, 24.
Norway and Sweden, insects of, IX, 79.
Notolophus leucostigma. *See* Orgyia.
Novius cardinalis, introduced into Portugal, XVIII, 30.
Nurseries, inspection of, II, 13.
legislation for, VI, 63.
Nursery question and San Jose scale, III, 71.
Nysius angustatus, mistaken for the chinch bug, XV, 64.
californicus, injurious to lettuce, XVIII, 101.
Oberea bimaculata, boring in apple and witch hazel, IX, 43.
effect of cold winter on, XXII, 57.
ocellata, injuries by, XIX, 98.
Ocneria dispar = Porthetria dispar.
Odontocera dorsalis, in timothy, XVII, 45.
Odontota dorsalis, abundance in Maryland, VI, 66.
damage by, in Ohio, VI, 68.
feeding on herbaceous plants, IX, 22.
injurious to apple, XX, 63.
Odynerus tigris, note on, XXX, 84.
Œdemagena tarandi, bot fly of reindeer, V, 105.
Œstris hominis, attacks on man, V, 112.
early notices of, V, 111.
ovis, injury to sheep, V, 102.
prevention and remedies, V, 105.
Ohio, insects of, XX, 68.
laws against injurious insects, XIII, 27.
Olfersia albipennis, on herons, V, 137.
americana, on owls, V, 137.
ardeæ, on herons, V, 137.
brunnea, mexicana, propinqua, and sulcifrons, notice of, V, 137.
Oligia grata, on violets, XXVII, 81.
Oligotrophus alopecuri, work of, in Germany, IX, 79.
Olliffiella cristicola, a gall-making coccid, VII, 76.
Omorga columbiana, parasite of Ephestia kuehniella, XX, 67.
frumentaria, parasite of Ephestia cahiritella, VIII, 43.
Plodia interpunctella, VIII, 41.
Tinea granella, VIII, 43.
Omphale livida, parasite of Ceuthorhynchus rapæ, XXIII, 49.
Monoptilota nubilella, XXIII, 16.
Oncideres amputator, food habits of, XVIII, 100.
putator, injurious to mesquite, XXII, 94.
Oncophorus advena, host of, V, 236.
minutus, host of, V, 230.
Onectra distincta, injuring young plum trees, IX, 43.
Oniscus, remedy for, XVIII, 98.
Oöencyrtus anasæ, parasite of Anasa tristis, XIX, 26.
Ophion bifoveolatum, parasite of white grub, XIX, 79.
Orchelimum agile, damage by, in Mississippi, XXX, 30.
Orcus australasiæ, importation of, in South Africa, IX, 37.
preying on San Jose scale, III, 53.
cæruleus, killing Dactylopius citri, XVIII, 100.
chalybeus, preying on San Jose scale, III, 53.
Oregon laws against injurious insects, XIII, 29.
wash, experiments with, against San Jose scale, III, 70.

Oreodera glauca, boring in sweet orange trees in Jamaica, VII, 85.
Orgilus mellipes, parasites of Elasmopalpus lignosellus, XXIII, 21.
Orgyia antiqua, injuring larch in Norway, IX, 80.
leucostigma, abundant in Baltimore, XX, 65; XXVI, 83.
Ohio, XVII, 100.
injurious in New York, XVII, 17, 20.
in Kansas, XXII, 103.
New England, II, 46.
parasites of, IX, 15.
Ormenis pruinosa, habits of, XXII, 98.
Ornithobius cygni, host of, V, 236.
parasite of the white swan, V, 202.
goniopleurus, host of, V, 236.
Ornithodorus americanus, mention of, V, 256.
savignyi, notes on, XXVI, 47.
Ornithomyia nebulosa, on owls, V, 137.
pallida, on Sylvia sialis, V, 137.
Orsodachna atra, feeding on pear and cherry, IX, 20.
Orthomorpha gracilis, on violets, XXVII, 82.
Orthoptera, abundant in Florida after cold and frosts, IX, 19.
Oscinis frit, damage to oats in Norway, IX, 79.
Oxycarenus hyalinipennis, damage by, in Egypt, XXII, 100.
Oxyptilus tenuidactylus, on blackberry in Ohio, XX, 71.
Pachyneuron altiscuta, parasite on plum scale, II, 90.
of Pulvinaria acericola, XXII, 23.
Paleacrita vernata, in Ohio, VI, 66; IX, 41.
New York, VI, 56.
Papabotte, food habits of, XXX, 93.
Papilio cresphontes, variation in development, IX, 43.
trolius, variation in development, IX, 43.
Parasites, carrying contagious disease, V, 19.
distribution of, V, 17.
effect of, on the host, V, 18.
from South Africa, XXVI, 19.
in general, life histories of, V, 14.
list of animal, according to hosts, V, 286.
literature of animal, V, 288.
losses due to animal, V, 20.
popular notions about, V, 21.
preventive measures against animal, V, 277.
remedies for animal, V, 24, 279.
Parasitic and predaceous insects, value of, against San Jose scale, III, 54.
habit, origin of, V, 16.
insects, grouping of, V, 11.
Parasitism, results of, V, 16.
Paris green, experiments with, VI, 33.
poisoning a tree, IX, 25.
Parlatoria pergandei, in Georgia, XXVI, 51.
zizyphus, in Georgia, XXVI, 51.
Paromalus estriatus, feeding on Leptocoris trivittatus, XXII, 103.
Parthenogenesis in Emphytus canadensis, XXVII, 33.
Pasimachus punctulatus, killing Anisodactylus verticalis, XXII, 103.
Pedicinus eurygaster, longiceps, and breviceps, mention of, V, 168.
Pediculoides ventricosus, feeding on Cicada eggs, XIV, 103.

Pediculoides ventricosus, attached to Bruchus chinensis, VIII, 27.
feeding an larvæ of Fidia viticida, VI, 69.
Pediculus capitatis, parasite of man, V, 166.
consobrinus, parasite of the ape, V, 168.
vestimenti, parasite of man, V, 167.
Pelecinus polyturator, parasite of white grub, XIX, 79.
Pemphigus acerifolii, abundant in Maryland, XX, 64; XXVI, 83.
Pennsylvania laws against injurious insects, XIII, 30.
Penthina chionesema, in Delaware, XXVI, 68.
cyanana, injuring roses, XXVII, 87.
nimbatana, account of, XXVII, 83.
Pentilia misella, preying on San Jose scale, III, 52.
rare in Ohio, XX, 73.
transporting larvæ of San Jose scale, III, 50.
Peridroma saucia, as a violet pest, XXVII, 50.
injury by, XXIX, 52.
account of, XXIX, 46.
life history, XXIX, 59.
in 1900, XXX, 69.
Perilampus cyaneus, parasite of Helicobia helicis, XXX, 26.
sp., bred from dead grasshoppers, VI, 92.
Perilitus ictericus, parasite of Pyralis farinalis, VIII, 43.
Perillus claudus, killing Colorado potato beetle, XXII, 102.
Periplaneta americana, damage by, IV, 90.
australasiæ, occurrence in United States, IV, 91.
orientalis, abundance in the Eastern cities, IV, 92.
Perissopterus pulchellus, parasite of Aspidiotus forbesi, VI, 75.
Petroleum, use of crude, XXVI, 23, 25.
experiments in using crude and refined, XXX, 33.
Phæogenes hebe, parasite of brown-tail moth, XVII, 28.
Phalangium ventricosus, attacking Chalybion cœruleum, XXII, 103.
Phanurus tabanivorus, egg parasite of Tabanus atratus, V, 63.
Phasgonophora sulcata, parasite of Agrilus anxius, XXII, 65.
Philippines, insects from the, XXX, 83.
Philotrypesis caricæ, a parasite of Blastophaga, XX, 32.
Phlegethontius. *See* Protoparce.
Phlœosinus cristatus, an enemy of redwood, XXI, 7, 20.
Phlyctænia ferrugalis=P. rubigalis, XXVII, 7.
rubigalis, full account as greenhouse pest, XXVII, 7.
injuring tobacco, IX, 83.
tertialis, on grape and elderberry, XVIII, 82.
Phorbia brassicæ, injurious in Canada, XXVI, 95.
ceparum, injurious in Canada, XXVI, 95.
Phorocera saundersi, parasite of Peridroma saucia, XXIX, 61.
sp., parasite of Orgyia leucostigma, IX, 17.
Phorodon humuli, compared with Myzus mahaleb, VII, 52.
damage by, in New York, VI, 54.
on plum and Pajan hop in Japan, VII, 87.
Phoxopteris comptana, effect of cold winter on, XXII, 57.
damage by, in Maryland, XXVI, 81.
in Colorado, XXVI, 80.
1900, XXX, 69.
Phthirius inguinalis, habits and remedies, V, 165.
Phyllobius pyri, attacking apples in Norway, IX, 80.

Phyllopertha horticola, injuring grass in Norway, IX, 79.
Phyllotreta armoraciæ, found in Wisconsin, IX, 21.
Phylloxera vastatrix, notes on, in California, XXVI, 93.
ravages of, in South Africa, IX, 37.
a new remedy against, XXX, 95.
Physostomum frenatum, hosts of, V, 248.
lineatum, description and host of, V, 248.
Phytomyza chrysanthemi, work against, XXVI, 34.
Phytonomus nigrirostris, damage by in Canada, XXVI, 96.
punctatus, effect of cold winter on, XXII, 57.
injury by, in Maryland, IX, 80; XVII, 93; XXVI, 81.
occurrence in Canada, XXVI, 96.
spread of, in Ohio, II, 90.
Phytophagic varieties, in Coccidæ, II, 91.
Phytoptus phlœocoptes, on plum in Ohio, XVII, 100.
pyri, injuring pears in Norway, IX, 80.
Pieris brassicæ, injuring cabbage in Norway, IX, 79
protodice, rare in Georgia, XX, 59.
in 1900, XXX, 67.
rapæ, abundant in Maryland, VI, 65; XX, 68; XXVI, 82.
destructive in Georgia, XX, 59.
effect of cold winter on, XXII, 56.
in Colorado, XXVI, 79.
1900, XXX, 70.
spread of in Canada, XXVI, 95.
Pimpla conquisitor, its relations to Clisiocampa americana, XXVI, 33.
parasite of Clisiocampa americana, XVII, 77.
inquisitor, parasite of Orgyia leucostigma, IX, 16.
pedalis and P. tenuicornis, parasites of the gipsy moth, VI, 52.
Pionea rimosalis, effect of cold winter on, XXII, 55.
injuring cauliflower in Georgia, XX, 59.
in 1900, XXX, 66.
Piophila casei, life history of, IV, 103.
remedies for, IV, 104.
Plathypena scabra, account of, XXX, 45.
Platygaster herrickii, parasite of Hessian fly, XVI, 35.
Platynota flavedana, on roses, XXVII, 88.
Platynus maculicollis, abundance of, in California, XXX, 90.
Platypus compositus, habits of, VII, 14.
flavicornis, mention of, VII, 15.
quadridentatus, mention of, VII, 15.
Plocamus hispidulus, on chestnut, VII, 72.
Plodia interpunctella, food habits of, IV, 118.
in dried apples, XXVII, 13.
life history of, IV, 119.
parasites of, VIII, 41.
sulphur as a remedy for, XXX, 88.
Plum scale, in Ohio, II, 89.
Plusia balluca, in New York, VI, 55.
brassicæ, destructive in Maryland, XVII, 94.
effect of cold winter on, XXII, 59.
in 1900, XXX, 67.
note on, XXX, 84.
rare in Georgia XX, 59.

Plusia brassicæ, rare in Maryland, XX, 67.
Plutella cruciferarum, abundant in Georgia, XX, 59.
in Colorado, XXVI, 79.
Podabrus rugulosus, feeding on pea lice, XX, 98.
Podisus serieventris, feeding on brown-tail moth, XVII, 28.
spinosus, killing Crioceris asparagi, XX, 71.
preying on Loxostege obliteralis, XXVII, 107.
Pogonomyrmex barbatus, note on, XXX, 97.
Poisoned leaves, repugnance of larvæ to, VI, 42.
Polistes bellicosus, preying on Laphygma frugiperda, XXIX, 36.
Pollenia rudis, found in houses, IV, 44.
Polygnotus hiemalis, parasite of Hessian fly, XVI, 36.
Polygonia comma, dimorphism of, VII, 51.
life history of, VII, 50.
interrogatonis, dimorphism of, VII, 49.
life history of, VII, 47.
Polygraphus rufipennis, work of, in spruce, XXVIII, 26.
Pomphopœa ænea, abundant in Ohio, XVII, 98.
injurious to peach blooms, XVIII, 100.
texana, injuring peach and plum trees, XVIII, 100.
Porthetria dispar, birds that feed on larvæ of, XX, 88.
conditions of, in 1898, XVII, 79.
in America, XI.
life history of, XI, 6.
parasites of, VI, 52.
resolutions approving work against, VI, 53; IX, 32.
territory infested by, XI, 8.
work against, II, 59; VI, 50; XX, 104.
Porto Rico, insects of, XXII, 88.
Praon cerasaphis, parasite of Nectarophora destructor, XXIII, 36.
Prionidus cristatus, in 1900, XXX, 70.
Prodenia commelinæ, account of, XXVII, 59.
eudiopta, account of, XXVII, 71.
flavimedia, equal P. eudiopta, XXVII, 71.
littoralis, injury of, in Egypt, XXII, 99.
ornithogalli, account of, XXVII, 64.
in 1900, XXX, 67.
Propolis, I, 24.
Prospalta aurantii, parasite of Aspidiotus forbesi, VI, 75.
murtfeldti, parasite of Aspidiotus forbesi, VI, 75.
Proteopteryx deludana, injuring pecan buds, XVIII, 99.
Proteoteras æsculana, work of, in Canada, XXVI, 96.
Protoparce carolina, common in Georgia, XX, 59.
effect of cold winter on, XXII, 59.
in Porto Rico, XXII, 89.
1900, XXX, 67.
injurious to tobacco in Maryland, IX, 81.
life history of, XVII, 72.
celeus, in 1900, XXX, 67.
Psallus delicatus, on cotton in Texas, XVIII, 101.
Pseudococcus aceris, damage by, in Ohio, XXVI, 90.
in Massachusetts, XVII, 61.
Springfield, Mass., II, 45.
life history, II, 45.

Pseudococcus aceris, means against, II, 46.
Pseudosphinx tetrio, injurious to shade trees in Porto Rico, XXII, 90.
Psila rosæ, injuring carrots, parsley, and celery in Norway, IX, 79.
Psoroptes communis, var. ovis, description and life history, V, 268.
parasite of sheep, V, 266.
Psydrus piceus, habits and odor of, IX, 53.
Psylla mali, attacking apples in Norway, IX, 80.
pyricola, abundant in Maryland, XX, 64.
Psylliodes punctulata, feeding on rhubarb, IX, 22.
Pteromalus calandræ, parasite of Calandra, VIII, 43.
pallipes, parasite of Hessian fly, XVI, 33.
puparum, in 1900, XXX, 70.
vanessæ, parasite of Polygonia comma, VII, 51.
interrogatonis, VII, 49.
Pteronus ribesii, damage by, in Maryland, XXVI, 82.
effect of cold winter on, XXII, 57.
injuring currants and gooseberries in Norway, IX, 80.
serious pest in Maryland, XX, 64.
Ptinus brunneus, food habits of, IV, 128.
fur, food habits of, IV, 127.
Pulex avium, notice of, V, 147.
bruneri, on spermophiles, V, 149.
coloradensis, on chickaree, V, 149.
fasciatus, on rats and mice, V, 148.
gigas, notice of, V, 152.
gilletti, from red squirrel, V, 149.
goniocephalus, notice of, V, 152.
hirsutus, on prairie dog, V, 149.
howardi, on squirrels, V, 148.
ignota=Typhlopsylla americana.
inæqualis, on rabbits, V, 153.
irritans, habits of, V, 147.
longispinus, on chickaree, V, 149.
montanus, from large gray squirrels, V, 149.
sciurorum, on squirrels, V, 148.
serraticeps, habits of, V, 150.
life history of, IV, 25; V, 151.
remedies for, IV, 29; V, 151.
simulans, on opossum, V, 146.
wickhami, from flying squirrel, V, 149.
Pulvinaria acericola, account of, XXII, 16.
distinct from P. innumerabilis, XVII, 57.
in Georgia, XXVI, 52.
amygdali, in Georgia, XXVI, 52.
innumerabilis, abundant in New York, XVII, 22.
account of, XXII, 8.
in Georgia, XXVI, 52.
macluræ, in Georgia, XXVI, 52.
Pyralis costalis, infesting grape leaves, XVII, 99.
farinalis, damage by, in Manitoba, XXVI, 96.
habits of, IV, 120.
life history of, IV, 120.
parasites of, VIII, 42.
Pyrausta ferrugalis=Phlyctænia rubigalis.

Pyrrhia umbra, eating rosebuds, XVII, 100.
Quarantine against insects, II, 12.
duty of entomologists, XVII, 9.
in Riverside, Cal., XXII, 87.
Queens, bee, care of, I, 87.
mailing of, I, 92.
rearing of, I, 87.
Rasahus biguttatus, habits of, XXII, 27.
thoracicus, habits of, XXII, 28.
Raupenleim, value and application of, II, 31.
Reduvius personatus, habits of, XXII, 24.
Redwood, not attacked by Termites, XXX, 95.
Resin wash, against San Jose scale, III, 58, 59.
experiments with, against San Jose scale, III, 68.
use and value of, IX, 56.
Rhiphistoma leporis, parasite of rabbit, V, 261.
Rhipicephalus decoloratus, notes on, XXVI, 45.
evertsi, notes on, XXVI, 46.
Rhizobius debilis, doubt as to occurrence in California, VI, 48.
feeding on San Jose scale, III, 54.
lophantæ, number in California, VI, 47.
ventralis, feeding on San Jose scale, III, 54.
value of, VI, 47.
in California, XXVI, 91.
Rhodobænus 13-punctatus, habits of, XXII, 104.
Rhopalosiphum dianthi, on violets, XXVII, 79.
violæ, affecting violets, XXVII, 42.
in Maryland, XXVI, 81.
Rhopobota vacciniana, a probable remedy for, XX, 53.
Rhynchites bicolor, injuring roses, XXVII, 98.
Rhynchoprium spinosum, mention of, V, 256.
Rhyssematus palmacollis, reared from galls on Ipomœa, XVII, 100.
Rose leaf-beetle=Nodonota puncticollis.
Rossing, of trees, VI, 50.
Salt, lime, and sulphur solution, against San Jose scale, III, 57, 58.
Sannina exitiosa, in Colorado, XXVI, 78.
pacifica, notes on, in California, XXVI, 93.
Saperda candida, gnawing young apples, VI, 68.
vestita, on linden in Ohio, XXVI, 89.
Sarcophaga assidua, parasite of Melanoplus differentialis, XXX, 25.
carnaria, habits of, V, 121.
cimbicis, bred from dead grasshoppers, VI, 92.
hunteri, parasite of Melanoplus differentialis, XXX, 25.
sarraceniæ, bred from dead grasshoppers, VI, 92.
parasite of Melanoplus differentialis, XXX, 25.
sp., bred from dead grasshoppers, VI, 92.
Sarcopsylla gallinacea, habits of, V, 144.
penetrans, habits and remedies, V, 142.
Sarcoptes cati, itch mite of cat, V, 271.
lævis, mention of, V, 274.
nutans, itch mite of fowls, V, 272.
scabiei, itch mite of man, V, 269.
Scale insects. *See* Coccidæ.
Scarites subterraneus, preying on Peridroma saucia, XXIX, 62.

Scatophaga furcata, liable to carry disease, XXX, 44.
Scelio hyalinipennis, bred from Melanoplus differentialis, XXX, 23.
œdipodæ, bred from Melanoplus differentialis, XXX, 23.
Scepsis fulvicollis, injurious in Wyoming, XVIII, 99.
Scheele's green, experiments with, VI, 30.
Schistocerca americana, effect of cold winter on, XXII, 56.
damage by, in Mississippi, XXX, 27.
in 1900, XXX, 68.
obscura, damage by, in Mississippi, XXX, 27.
Schizoneura americana, abundant on white elm in Colorado, IX, 78.
lanigera, damage by, in Colorado, XXVI, 78.
increase of, in Ohio, II, 91.
notes on life history of, XVII, 70; XVIII, 78.
worse in Virginia than San Jose scale, XVII, 43.
Sciara inconstans, account of, XXVII, 108.
Scolytid injuring vinegar barrels, XVII, 47.
Scolytus præceps, an enemy of fir, XXI, 26.
4-spinosus, damage by, VI, 79.
rugulosus, attacking healthy trees, XIX, 96.
common in Georgia, XX, 58.
damage in Maryland, VI, 65; XXVI, 82.
sp., destructive to white fir, XXI, 16.
unispinosus, an enemy of red fir, XXI, 16, 21.
work of, II, 35, 77.
Screw-worm=Compsomyia macellaria.
Scutellista cyanea, establishment of, in California, XXVI, 16.
introduced into this country, XVII, 13.
Scutigera forceps, distribution of, IV, 48.
food habits of, IV, 49.
poison of, IV, 50.
remedies for, IV, 50.
Scymnus lophanthæ, feeding on San Jose scale, III, 53.
marginicollis, mistaken for Rhizobius debilis, VI, 48.
Sejus auris, mention of, V, 255.
Selandria cerasi, called "pear-tree psylla" in British Columbia, VII, 84.
vitis, in Ohio, XX, 71.
Semiotellus destructor, in Iowa, VI, 80.
Sesamia nonagrioides, in sugar cane, XVIII, 90.
Sesia rutilans, account of, XXIII, 85.
tipuliformis, abundant in Colorado, XXVI, 78.
Shade-tree insects, II, 40.
Signophora nigrita, parasite of Aspidiotus forbesi, VI, 75.
Silpha opaca, injuring cabbage in Norway, IX, 79.
Silvanus abeillei, mention of, VIII, 11.
bicornis, notes on the distinctness of, VIII, 10.
denticollis, mention of, VIII, 11.
fauveli, mention of, VIII, 11.
gossypii, description and food habits of, VIII, 12.
mercator, occurrence of, in this country, VIII, 12.
surinamensis, food habits of, IV, 121.
life history of, IV, 122.
notes on, XX, 67.
Simulium canescens, notice of, V, 57.
columbatzense, habits of, V, 38.

Simulium meridionale, life history of, V, 52.
means against, V, 54.
molestum, habits of, V, 40.
occidentale, habits of, V, 55.
ornatum, habits of, V, 39.
pecuarum, and overflows, V, 50.
area infested by, V, 42.
early account of, V, 41.
effect of bite, V, 44.
life history and habits, V, 44.
losses occasioned by, V, 43.
remedies for, V, 49.
pictipes, notice of, V, 58.
piscicidium, habits of, V, 56.
rivulare, notice of, V, 57.
sp., notice of, V, 58.
spp., rarity of, in New York, VI, 55.
venustum, notice of, V, 57.
Siphonophora achyrantes = Myzus mahaleb.
avenæ, in Ohio, II, 90.
Sitodrepa panicea, damage by, in South Africa, IX, 37.
damaging boots, VII, 85.
food habits of, IV, 124.
Sitotroga cerealella, common in Maryland, XVII, 94.
infesting barley, IX, 26.
in various cereals, IV, 129.
Pennsylvania, XXX, 86.
Smelting works, beetles near, XXX, 97.
Smilia misella=Pentilia.
Snipe flies, blood-sucking species, V, 71.
Soap, hard laundry, experiments with, against San Jose scale, III, 68.
Soaps as insecticides, IX, 54.
South Africa, some injurious insects of, IX, 34.
Spalangia rugicollis, parasite of Pyralis farinalis, VIII, 42.
Spartocera fusca, injurious in Porto Rico, XXII, 90.
Spathius simillimus, parasite of Agrilus bilineatus, VII, 71.
Spermophagus pectoralis, notes on, XXIII, 37.
Sphærophoria cylindrica, feeding on Nectarophora destructor, XX, 97; XXVI, 71.
Sphecius nevadensis, attacking codling-moth larvæ in pears, VII, 84.
Sphenophorus parvulus, effect of cold winter on, XXII, 58.
sculptilis, injuring timothy roots, XVII, 45.
outbreak of, in Ohio, XXVI, 86.
sexguttatus, injury by, in Porto Rico, XXII, 89.
Sphinx catalpæ, unusually numerous in Maryland, XX, 65.
Spiders, use of in wine cellars, VII, 82.
Spilosoma virginica, injuring onions in Georgia, XX, 59.
Massachusetts, XX, 60.
on violets, XXVII, 81.
Sporotrichum globuliferum, against the chinch bug, II, 87; VI, 19; XV, 41.
Spraying without a pump, II, 28.
Spruce bark beetles, notes on, XVII, 67.
insects affecting, XXVIII.
girdling of trees, XXVIII, 31.
Squirrels, insectivorous habits of, XXX, 94.

Stagmomantis carolina, an enemy to bees, XXII, 108.
Steam and superheated water as insecticides, IX, 62.
Steganoptycha sp., damage by, in Delaware, XXVI, 69.
Stenomacra marginella, enemy of figs in Mexico, XXX, 93.
Stomoxys calcitrans, found in houses, IV, 43.
habits of, V, 122.
liable to carry disease, XXX, 43.
Strategus antæus, injury by, in Alabama, XXII, 105.
Strebla vespertilionis, notice of, V, 140.
Sturmia distincta, parasite of the bagworm, IX, 42.
Sugar-cane insects in Reunion, XXX, 82.
Sulphide of soda wash against San Jose scale, III, 58.
Swarming, methods of, I, 95.
prevention of, I, 101.
Symphoromyia sp., sucking blood, V, 71.
Syromastes marginatus, injuring rhubarb in Norway, IX, 79.
Syrphus americanus, feeding on Aphis mali, XXVI, 68.
pea lice, XX, 97; XXVI, 71.
Schizoneura, IX, 79.
Systena blanda, account of, XXIII, 22.
effect of cold winter on, XXIII, 58.
injurious to pear, XX, 63.
work of, in Maryland, XXVI, 83.
frontalis, on sugar beets in New York, XX, 60.
tæniata, relation of, to S. blanda, XXIII, 23.
work of, in Ohio, II, 87.
Tabanidæ, remedy for, XX, 24.
Tabanus annulatus, notice of, V, 66.
atratus, life history of, V, 61.
bovinus, notice of, V, 68.
costalis, habits and life history of, V, 65.
lineola, habits of, V, 63.
life history of, V, 64.
molestus, notice of, V, 68.
stygius, habits and life history, V, 67.
Tachardia lacca, mention of, IX, 38.
larreæ, use of, IX, 38.
species of, in North America, IX, 39.
Tachina mella, parasite of Orgyia leucostigma, IX, 16.
Telenomus graptæ, oviposition of, XXVI, 32.
parasite of Polygonia interrogatonis, VII, 49.
Telephorus obscurus, attacking apples in Norway, IX, 80.
Temelucha macer, parasite of Hellula undalis, XXIII, 60.
Temperature control of scale insects, XX, 73.
effect on hibernation of insects, IX, 18.
household insects, VI, 13.
influence of, on chinch bugs, XV, 38.
Tenebrio molitor, habits of, IV, 117.
life history of, IV, 116.
obscurus, characters of, and damage by, IV, 117.
experiments with cold on, VI, 16.
larvæ in soda ash, VII, 81.
Tenebroides corticalis, predaceous on Liopus variegatus, VII, 72.
mauritanicus, habits of, IV, 122.

Tenebroides mauritanicus, notes on, XX, 67.
Teras minuta, injuring cranberries, XX, 55.
Termes flavipes, damage to books and papers, IV, 74.
buildings and furniture, IV, 74.
eating into cornstalks, XXVI, 36.
habits of, IV, 71.
injuring geraniums, VI, 68.
injurious in Baltimore, XVII, 92.
life history of, IV, 72.
protection against, IV, 75.
lucifugus, in America, IV, 73.
Termites, not attacking redwood, XXX, 95.
in Mexico, XXX, 96.
Tersesthes torrens, affecting horses, V, 30.
Tetramorium cæspitum, in houses, IV, 98.
killing white grub, XIX, 79.
Tetranychus bimaculatus, injuring violets, XXVII, 35.
cucumeris, XXVII, 37.
sp., injuring pine in Norway, IX, 80.
telarius, injuring roses in Norway, IX, 80.
Tetraopes femoratus, oviposition of, in forest trees, IX, 76.
Tetropium cinnamopterum, work of, in spruce, XXVIII, 27.
Tettigonia circillata, injurious to the vine in California, XXVI, 94.
Thanasimus nubilus, preying on Dendroctonus piceaperda, XXVIII, 24.
Therioplectes cinctus, notice of, V, 69.
Theronia fulvescens, parasite of Neophasia menapia, VII, 78.
Orgyia leucostigma, IX, 16.
Pimpla conquisitor, XXVI, 33.
Thrips tabaci, abundance of, in Ohio, XXVI, 86.
damage by, in Georgia, XX, 59.
destroyed by a gregarious parasite, XX, 60.
very abundant in Ohio, XX, 69.
tritici, injuring plums in Florida, XVIII, 101.
Thyridopteryx ephemeræformis, damage by, in Maryland, XX, 65; XXVI, 84.
spreading northward in Ohio, IX, 42.
unusual abundance in Ohio, VI, 67.
Ticks, notes on South African, XXVI, 41.
Tinea biselliella=Tineola.
cloacella, note on, VIII, 35.
defectella, bred from a fungus, VIII, 35.
fuscipunctella, food habits of, VIII, 35.
granella, history of, in America, VIII, 32.
parasites of, VIII, 43.
pallescentella, mention of, VIII, 35.
pellionella, habits and life history of, IV, 65.
sp., bred from meal and refuse, VIII, 35.
Yucca pods, VIII, 35.
tapetzella=Trichophaga.
Tineola biselliella, effect of alternation of temperature on, IX, 19.
experiments with cold on, VI, 15.
habits of, IV, 66.
Tipula oleracea, injuring cabbage in Norway, IX, 79.
Titanio octonalis, on Onosmodium carolinianum, XXII, 103.
Tmetocera ocellana, rare in Delaware, XXVI, 69.

Tmetocera ocellana, scarcity of, in New York, VI, 54.
Tomicus cacographus, abundant on a spruce, VII, 73.
pini, destructive to lodgepole pine, XXI, 16.
Tortricid, feeding on apples, VI, 70.
Tortrix albicomana, on roses, XXVII, 88.
citrana, in California, XVIII, 99.
Tranes sp., injurious to Cycads, VII, 85.
Tree Protection League, notice of, II, 47.
Tribolium confusum, damage to stored foods, IV, 113.
life history of, IV, 114.
notes on, XX, 67.
ferrugineum, notes on, IV, 115.
madens, in flour, IX, 85.
Trichius piger, on rose, XXVII, 100.
Trichobaris trinotata, damage in Maryland, VI, 65.
on eggplants, IX, 81.
prevalent in Maryland, XXVI, 83.
Trichobius dugesii, parasite on a bat, V, 139.
Trichodectes breviceps, parasite of the llama, V, 204.
castoris, description and host of, V, 241.
climax, host of, V, 237.
parasite of the goat, V, 204.
crassus, host of, V, 237.
equi, parasite of horses, mules, and asses, V, 207.
geomydis, description and host of, V, 239.
latus, host of, V, 236.
parasite of the dog, V, 203.
limbatus, host of, V, 237.
parasite of Angora goat, V, 206.
mephitidis, description and hosts of, V, 242.
parallelus, description and host of, V, 240.
parumpilosus, host of, V, 238.
parasite of horses, V, 208.
pilosus, hosts of, V, 239.
pinguis, parasite of the bear, V, 204.
retusus, hosts of, V, 237.
scalaris, host of, V, 238.
parasite of cattle, V, 209.
setosus, host of, V, 239.
sphærocephalus, host of, V, 237.
parasite of sheep, V, 206.
subrostratus, host of, V, 237.
parasite of the cat, V, 203.
tibialis, host of, V, 240.
Trichogramma pretiosa, parasite of eggs of codling moth, VI, 70
Trichophaga tapetzella, habits of, IV, 67.
Trichopoda pennipes, parasite of Anasa tristis, XIX, 26.
Trinoton conspurcatum, parasite of goose and swan, V, 213.
lituratum, hosts of, V, 248.
parasite of geese, V, 214.
luridum, hosts of, V, 248.
parasite of ducks, V, 213.
minor, description and host of, V, 248.
squalidum=lituratum.

Triphleps insidiosus, enemy of chinch bug, XV, 53.
Trogoderma ornatum, eating dry pop corn, VIII, 14; XVII, 99.
sp., feeding on flaxseeds, castor beans, silkworm cocoons, and clover seed, II, 37.
sternale, feeding on seeds, VIII, 21.
tarsale, experiments with cold on, VI, 16.
in various foods, II, 37; IV, 129; VIII, 19.
Trombidium locustarum, parasite of Melanoplus bivittatus, VI, 67.
differentialis, XXX, 22.
magnificum, abundant in Arizona, VII, 87.
Trunk and crown washing against elm leaf-beetle, futility of, VI, 36.
Tsetse fly=Glossina morsitans.
Turkey gnat=Simulium meridionale.
Twine, insects injuring, XXX, 94.
Typhlocyba comes, notes on California, XXVI, 93.
rosæ, injuring roses in Norway, IX, 80.
Typhlopsylla americana, on pocket gopher, V, 154.
assimilis, on mole, V, 153.
octactenus, hexactenus, pentactenus, dictenus, mention of, V, 155.
unipectinata, musculi, caucasia, gracilis, alpina, and fraterna, mention of, V, 155.
Typophorus canellus, on strawberries, IX, 82.
transporting larvæ of San Jose scale, III, 50.
Tyroglyphus, remedies for, IV, 102.
longior, infesting food, IV, 101.
siro, infesting food, IV, 101.
sp., in nuts from Japan, IX, 43.
Uranotes melinus, feeding on lima beans, IX, 83.
Urographis fasciatus, boring in chestnut, VII, 71.
Utah laws against injurious insects, XIII, 32.
Valgus canaliculatus, injuring buds of fruit trees, VI, 68.
Vanessa antiopa, abundant in New York, XX, 60.
Vernacular names of insects, XVII, 90.
Vespa germanica, habits of, IV, 56.
Virginia laws against San Jose scale, XIII, 33.
Warbles, in man, V, 91.
Warble flies, extent and manner of injury, V, 88.
life history and habits, V, 91.
loss in milk and beef from their attacks, V, 89.
on hides, V, 88.
remedies against, V, 93.
species of, V, 87.
Washington laws against injurious insects, XIII, 34.
Wax, I, 25, 84.
Weather, the effect of, on insects, XXII, 51; XXX, 63.
Webworms abundant in West Virginia, VI, 72.
Whale-oil soap, experiments with, against San Jose scale, III, 67.
value of, VI, 40.
White grubs abundant in Ohio, XX, 68.
injuring greenhouse plants, XXVII, 74.
parasites of, XIX, 79.
remedies for, XIX, 79.
Whitewash, experiments with, XXX, 38.

Winter washes, experiments with, against San Jose scale, III, 67.
value of, against San Jose scale, III, 61.
Winthemia quadripustulata, parasite of Laphygma frugiperda, XXIII, 84; XXIX, 35
Peridroma saucia, XXIX, 62.
Wireworms, injuring oats, XVII, 101.
violets, XXVII, 77.
Works on North American entomology, a list of, XXIV.
Xyleborus affinis, mention of, VII, 20.
celsus, habits of, VII, 24.
dispar, abundance of, in England, IX, 26.
habits of, VII, 22.
fuscatus, habits of, VII, 21.
inermis, mention of, VII, 20.
obesus, habits of, VII, 23.
perforans, habits of, VII, 21.
pini, mention of, VII, 20.
planicollis, mention of, VII, 20.
propinquus, mention of, VII, 20.
pubescens, boring in wine casks, VII, 85.
habits of, VII, 19.
pyri=dispar.
retusicollis, mention of, VII, 20.
saxeseni=xylographus.
tachygraphus, boring in box elder, redbud, tulip tree, maple, beech and sumac, VII, 79.
habits of, VII, 23.
xylographus, habits of, VII, 24.
Xylina cinerea, injuring apples in western New York, VII, 84.
outbreak of, in New York, XVII, 21.
laticinerea, outbreak of, in New York, XVII, 21.
Xylococcus betulæ, on birch, XVIII, 13.
Xylocrius agassizii, notes on, XXIII, 90.
Xylonomus rileyi, parasite of Xylotrechus colonus, VII, 72.
Xyloryctes satyrus, injury to ash in Virginia, XXII, 105.
Xyloterus bivittatus, an enemy of tide-land spruce, XXI, 21.
distribution of, VII, 28.
politus, habits of, VII, 28.
retusus, habits of, VII, 29.
scabricollis, mention of, VII, 29.
Xylotrechus colonus, bred from seasoned hickory, XVII, 46.
on chestnut, VII, 72.
Zophodia convolutella, injuring gooseberries in Norway, IX, 80.

O

APPENDIX TO BULLETIN 36, N. S., DIVISION OF ENTOMOLOGY.

General Index of Bulletin 10, N. S.

[Omitted from Bulletin 36.]

[While the manuscript for Bulletin 36 was partially prepared the cards for the general index of Bulletin 10 became lost. They have been rewritten and are published below. The illustrations and authors in Bulletin 10 will be found indexed in their proper places in Bulletin 36.]

Acridium frontalis, in 1897, X, 45.
shoshone, in 1897, X, 47.
Acronycta oblinita, on asparagus, X, 61.
Agromyza æneiventris, habits of, X, 78.
diminuta, habits of, X, 78.
jucunda, habits of, X, 77.
melampyga, habits of, X, 77.
neptis, habits of, X, 78.
setosa, habits of, X, 78.
simplex, on aspargus, X, 62.
Agromyzidæ, habits of, X, 70.
Agrotis ypsilon, on asparagus, X, 61.
Allorhina mutabilis, habits of, X, 21.
nitida, account of, X, 20.
in a cellar, X, 93.
remedies for, X, 24.
Anabrus simplex, in 1897, X, 48.
Anarsia lineatella, account of, X, 7.
bibliography of, X, 18.
life history, X, 9.
parasites of, X, 17.
pruinella, synonym of A. lineatella, X, 7.
Anthonomus signatus, injuries and bibliography, X, 82.
Aphis gossypii, injuring asparagus, X, 62.
Aplastomorpha prattii, parasite of Bruchus 4-maculatus, X, 92.
Apple, leaf-miner in, X, 87.
Argyresthia conjugella, mining apple, X, 37.
Bibio albipennis, associated with asparagus, X, 62.
hortulans, on asparagus in Europe, X, 62.
Black flies, synopsis of, X, 66.
Blister beetles, windrow remedy for, X, 93.
Bruchobius laticollis, parasite of Bruchus obtectus and B. 4-maculatus, X, 92.
Bruchus exiguus, note on, X, 92.
Cabbage worms, remedy for, X, 98.
Calocoris chenopodii, preying on Crioceris asparagi, X, 57.
Catocala lacrymosa, abundant in Mississippi, X, 97.
Celatoria diabroticæ, parasite of Diabrotica, X, 29.
Cephalonomia sp., parasite of Bruchus 4-maculatus, X, 92.
Ceraphron beneficiens, parasite of Diatræa striatalis, X, 33.
Ceratomyza dorsalis, habits of, X, 77.
Chætosticha nana, parasite of Diatræa striatalis, X, 33.
Chalepus trachypygus, at lights in New Orleans, X, 98.
Chilo infuscatellus, in sugar cane in Java, X, 34.
Chloride of lime, against house fly, X, 64.

Chlorops assimilis, habits of, X, 71.
graminea, habits of, X, 71.
ingrata, habits of, X, 71.
proxima, habits of, X, 70.
Collops 4-maculatus, feeding on Crioceris asparagi, X, 55.
Copidosoma variegatum, parasite of Anarsia lineatella, X, 17.
Corythuca irrorata, injuring chrysanthemums,, X, 99.
Crioceris asparagi, notes on, X, 54.
5-punctata, on asparagus, X, 59.
12-punctata, account of, X, 57.
14-punctata, on asparagus, X, 59.
Datana angusii, injuring pecans, X, 97.
Dendroctonus rufipennis, injury by in New Hampshire, X, 98.
Diabrotica 12-punctata, injuring asparagus, X, 59.
notes on, X, 30, 73.
trivittata, note on, X, 27.
vittata, notes on, X, 26.
parasites of, X, 29.
Diatræa saccharalis, in sugar cane, X, 73.
striatalis, in sugar cane in Java, X, 32.
Dichelia sulphureana, on asparagus, X, 60.
Dissosteira longipennis, in 1897, X, 44.
Dysdercus suturellus, food plants of, X, 95.
Elachiptera costata, habits of, X, 72.
flavida, habits of, X, 73.
longula, habits of, X, 72.
nigriceps, habits of, X, 72.
nigricornis, habits of, X, 72.
Elasmopalpus lignosellus, in corn stalks, X, 73.
Epicauta lemniscata, note on, X, 93.
Epitrix cucumeris, note on, X, 79.
parvula, account of, X, 79.
Eupelmus cyaniceps, parasite of Bruchus obtectus and B. exiguus, X, 92.
Euschistus crassus, injuring asparagus, X, 62.
servus, injuring asparagus, X, 62.
Gaurax anchora, habits of, X, 71.
araneæ, habits of, X, 72.
Gracillaria fasciella, note on, X, 88.
Grapholitha bracteatana, injuring Douglas spruce, X, 98.
schistaceana, in sugar in Java, X, 34.
Grasshoppers, collecting in New Hampshire, X, 97.
eggs of in Morocco, X, 96.
in 1897, X, 40.
poisoning in Natal, X, 96.
Hæmatopinus stenopsis, parasite of goat, X, 99.
Heliothis armiger, on asparagus, X, 60.
Heterocampa manteo, on oak in Mississippi, X, 98.
Hippelates convexus, habits of, X, 73.
Hippiscus corallipes, in 1897, X, 44.
Hippodamia convergens, feeding on Crioceris asparagi, X, 55.
glacialis, voracity of, X, 99.
Homalodisca coagulata, injuring asparagus, X, 62.
House fly, experiments against, X, 63.

Icerya purchasi, in Portugal and the Azores, X, 89.
Insectivorous birds, X, 31, 47.
Laverna herellera, boring in apple, X, 37.
Lead-boring insect, X, 88.
Leptoglossus phyllopus, injuring asparagus, X, 62.
Leucarctia acræa, on asparagus, X, 61.
Leucopis bella, habits of, X, 76.
bellula, habits of, X, 77.
nigricornis, habits of, X, 76.
simplex, habits of, X, 76.
Lioderma uhleri, damage by in S. Dakota, X, 94.
Lophoderus triferana, on asparagus, X, 61.
Lopidea media, injuring asparagus, X, 61.
Loxotropa californica, parasite of Chlorops assimilis, X, 71.
Mamestra legitima, on asparagus, X, 60.
picta, on asparagus, X, 61.
trifolii, on asparagus, X, 61.
Megilla maculata, feeding on Crioceris asparagi, X, 55.
Melanoplus angustipennis, in 1897, X, 44.
atlanis, in 1897, X, 44.
bivittatus, in 1897, X, 44.
differentialis, in 1897, X, 44.
femur-rubrum, in 1897, X, 44.
fœdus, in 1897, X, 44.
lakinus, in 1897, X, 46.
propinquus, on asparagus, X, 62.
spretus, in 1897, X, 41.
Melolontha vulgaris, injuring asparagus, X, 59.
Meromyza americana, habits of, X, 70.
Metapodius femoratus, injuring asparagus, X, 62.
Murgantia histroniça, food habits of, X, 94.
injuring asparagus, X, 62.
Musca domestica, experiments against, X, 63.
Myobia pumila, parasite of Crioceris asparagi, X, 57.
Mytilaspis citricola, in Azores, X, 89.
Myzus mahaleb, injuring asparagus, X, 62.
Nehalenna posita, catching Crioceris asparagi, X, 57.
Nephopteryx rubrizonella, infesting pear in Japan, X, 38.
Noctua fennica,on asparagus, X, 61.
Nomius pygmæus, in Oregon, X, 98.
Oscinidæ, habits of, X, 70.
Oscinis carbonaria, habits of, X, 74.
coxendix, habits of, X, 73.
longipes, habits of, X, 74.
pallipes, habits of, X, 74.
soror, habits of, X, 73.
trigramma, habits of, X, 73.
umbrosa, habits of, X, 74.
Oxymorpha livida, parasite of Anarsia lineatella, X, 17.
Pachyophthalmus floridensis, parasite of wasps, X, 99.
Pediculoides ventricosus, infesting Anarsia lineatella, X, 17.
Pezotettix chenopodii, in 1897, X, 48.
Philodromus vulgaris, catching house flies, X, 99.

Phyllotreta pusilla, notes on, X, 92.
Phytomyza aquilegiæ, habits of, X, 78.
chrysanthemi, habits of, X, 79.
obscurella, habits of, X, 79.
Pieris protodice, injury by in Utah, X, 98.
Platyparæa pœciloptera, on asparagus in Europe, X, 62.
Podisus spinosus, preying on beetles, X, 56.
Pœcilocapsus lineatus, injuring asparagus, X, 61.
Polistes pallipes, preying on Crioceris asparagi, X, 57.
Prionidus cristatus, feeding on Diabrotica 12-punctata, and on Phytonomus puncatus, X, 31.
Prodenia commelinæ, on asparagus, X, 60.
lineatella, on asparagus, X, 60.
Pyrausta penitalis, in pond-lily, X, 72.
Rhyssalus atriceps, parasite of Dichelia sulphureana, X, 60.
Scirpophaga intacta, in sugar cane in Java, X, 33.
Sesia pyri, in Mississippi, X, 97.
Simuliidæ of U. S., synopsis of, X, 66.
Simulium, species in U. S., X, 68.
Siphonella inquilina, habits of, X, 75.
oscinina, habits of, X, 75.
Siphonophora erigeronensis, on tomato, X, 99.
Stiretrus anchorago, preying on beetles, X, 56.
Stomoxys calcitrans, means against, X, 65.
Thyanta custator, injuring asparagus, X, 62.
Tinea ferruginella, notes on, X, 90.
misella, may be mistaken for T. granella, X, 91.
Trichodectes climax, parasite of goat, X, 99.
limbatus, parasite of goat, X, 99.
Trioza diospyri, on Chinese persimmon, X, 99.
Vedalia cardinalis, introduction into Portugal, X, 90.

○